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## ORIGINAL ARTICLES.

### RIB RESECTION IN EMPYEMA.

INDISCRIMINATE AND EXCESSIVE PRACTICE THEREOF.

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Estlander and Schede devised their extensive thoracic resections for certain desperate cases of empyema over twenty years ago. For a long time many of the profession undervalued their work—in fact seemed almost to forget it. More recently they have awakened to its importance, and some of them go so far as to advocate the resection of ribs in all cases of empyema. They forget the splendid results we have had for twenty-five years in cases that do not need resection. When we learn some new thing in surgery, we seem straightway to forget what we knew before. We ought to repeat Rudyard Kipling's famous "Recessional" hymn; where he prays Heaven for help:

**Lest we forget—lest we forget.**

In time past, empyema was usually a fatal disease, especially in children. Old Sir Astley Cooper, with all his immense experience, said he never saw a case recover after tapping for hydrothorax, evidently because he knew nothing about sterilizing the pleural cavity. He, however, felt the necessity of drainage in empyema, and devised a metallic tube with a flange to it to prevent it from falling into the cavity, and a cork stopper to prevent the flow of air through it. This was the precursor of the flanged soft-rubber tube devised by myself, which has been so much used in the United States.

Before antiseptics were systematically recognized, it was well known that admission of air to the pleural cavity caused in some way a fatal blood poisoning. Forty years ago Bowditch of Boston won renown by showing that the patient could, by proper precautions, be tapped, and the pus evacuated without admitting any air, and that by one or several such tappings many patients were cured. Various methods of evacuation on this principle were devised.

About twenty-five years ago we began in Chicago to treat empyema by inserting a flanged soft-rubber tube, and rinsing out the cavity daily by a copious irrigation with antiseptics. At the close of the dressing a small cork was used to close the tube, and an antiseptic compress applied. In almost all cases, the pus in a few days ceased to flow, the irrigating fluid returned clear, and the patient soon began to grow strong and put on the aspect of health. In this treatment we soon learned that air in the pleural cavity had no septic influence, if the cavity itself was well wet with a mild antiseptic fluid. The germs were destroyed and the cavity remained sterile, just as Tyndall sterilized the air in tight boxes in his famous experiments. Meanwhile most of the patients made a rapid recovery, without any resection of ribs whatever.

About twenty years ago Estlander and Schede discovered that certain very bad cases could be cured by extensive resections of the ribs and of the thoracic walls, and a part of the profession now advocate rib resection in all cases of pyemia, and another part dispute them with vehemence. For instance, Bolton[1] of London directs "in all cases the resection of a piece of rib," but C. G. Comstock of Boston reports six cases to show that the siphon can cure without resection, and he thinks the rib operation often unnecessary. A. Rey of Algiers[2] advocates trephining the rib instead of ordinary resection—preferably the ninth rib seven centimeters from the costal angle—but Boisson[3] advocates extensive resection. S. G. Bonney of Boston advises drainage, usually without resection, and states that cases proper for extensive resections like Estlander and Schede's are very rare.

Various Chicago surgeons have found that antiseptic irrigation, commenced very cautiously at first, is entirely safe, but that excellent authority, J. McFadden Gaston of Georgia thinks that antiseptic irrigation is dangerous and should never be used. Dr. B. F. Curtis of New York favors resection in some cases, but opposes it in others, but Dr. F. W. Murray advises resection "in all cases." He quotes a German writer as stating that in 156 cases of extensive resection death directly followed in four cases, and only 56 per cent. were known to be finally healed without fistula, but yet he goes strongly for resection.

Boisson advises to resect ribs, open wide, insert fingers and explore, but Cantley of London says incision is better than resection, and that in resections in children under 2 years of age five out of six are fatal.

Batten of London says resection is the only thing, but Wightman disagrees with him. He says the mortality of resection in 656 children, taking all ages together, was about one in six—16 per cent.—and in younger children much greater. He agrees with Morison of Hartlepool, England, that incision and drainage is usually sufficient.

C. H. Bäumler says, resect in tubercular cases, and also when "suppurative bacteria" are present, but others object that if suppurative microbes are present it has been found there is danger of infecting the cancellated tissue of the resected ribs with osteomyelitis. The same objection is urged against the idea of Bonney, who thinks a fetid odor of the pus to be a reason for resection instead of incision. His opponents reason that the microbes of osteomyelitis are more likely to be present when the pus is fetid, and consequently the cancellated tissue of the bone should not be wilfully exposed to saturation with such pus. They quote cases to show this danger.

[1] Brit. Med. Jour., Nov. 25, 1895.
[2] Lyons Med. Jour., June, 1895.
[3] Archiv. de Med.

This contradictory state of surgical literature seems to require some consideration on our part. Twenty-one years ago Estlander of Germany published his large resecting operation, which he called pleurectomy, for empyema. A year later Schede proposed a modification of it for the worst cases. He advised to remove very extensively the chest wall, including the thick cicatricial layer sometimes occupying the place of the pleural membrane, along with the ribs, intercostals, etc. He named the operation thoracoplasty. Several modifications have since been devised for these operations, and the result has been to turn attention more decidedly to the resection of ribs in these cases, and there is urgent demand for information as to what cases require rib resection and what should have the safer and milder measure of simple tubing and irrigation. As a description of the technic of all the different treatments would stretch this article to a tedious length, I will give only a condensed statement of the subject.

A generation ago, empyema discharging externally was usually fatal. The first decided improvement came from applying to the disease the principles of Lister. I recollect very well the general horror of introducing anything into the pleural cavity, based on the observed fact that any air admitted there usually brought on sepsis, hectic and the ultimate death of the patient. Sepsis was attributed to the oxygen of the air, and not to the germs floating in it, hence the only effort was to tap, or aspirate without admitting air. It came upon us like a sunburst when we discovered that a pleural cavity already infected, and the patient far gone in hectic, could be easily disinfected and the air admitted freely without danger, if the cavity is washed out as often as necessary, and that the hectic ceased, the patient grew fat and rosy, and actually got well with plenty of air in the pleura all the time. We had discovered that oxygen in the presence of antiseptic solutions was perfectly harmless. This revolutionized treatment in Chicago, and I presume it did elsewhere. I speak now of ordinary cases. I will recur to exceptional ones later.

For the great majority of cases as they occur among us the following statement is true, especially those of a few weeks' or months' standing: If the cavity has not been opened many of them will recover, as Bowditch showed, by from one to three aseptic tappings with an aspirator, with or without a sterilized boric acid irrigation superadded. The opinion of the profession is that children recover oftener than adults on this simple plan. But if there is already a discharging, infected orifice leading out from the pleura, then mere aspiration does not succeed. In these cases the orifice must be enlarged. The opening is discharging a great quantity of putrid pus daily, the patient has hectic fever and all the other signs of general poisoning. The first thing done is to insert a bistoury and freely enlarge the orifice, or make a new one if the present opening is not conveniently situated. Usually it is found that the original opening is too small, and though daily discharging a large quantity of foul-smelling matter, the latter is forced out through a stricture by a strong pressure from within. As soon as the bistoury enlarges the fistula a great quantity of the retained fluid gushes out. A soft-rubber tube with a flange to it is inserted and the cavity is well washed.

Dr. Gaston of Georgia says this is dangerous and ought not to be done. Long experience has shown us in Chicago that it is safe if properly performed. Of course, one should not irrigate the pleura with corrosive sublimate; nor with a 3 per cent. solution of carbolic acid. We begin with a warm but weak sterilized solution of boric acid—say one of about .5 per cent. in strength. A little is put in at first, to see if there is any cough and irritation produced by the fluid penetrating into a bronchus. Generally there is no trouble. If it is well borne more is thrown in, and so gradually testing the question of a bronchial fistula, you generally finish by a free washing out of the whole cavity. The next day you proceed again, and make the solution a little stronger, and thus come to nearly a 4 per cent. solution gradually. At first we used carbolic acid very cautiously. It succeeded perfectly if carefully watched, but with such a large absorbing surface care had to be exercised against toxic effects. The flanged rubber tubes are of various sizes. We study the spaces between the ribs, and put in as large a tube as will enter a little flattened. Cutting off the tube at whatever length will reach the deeper parts, cut the end sloping and make one fenestrum near the tip. After each irrigation, a small cork is inserted until the next dressing and a borated gauze compress placed over all. Many leave the cork out. The flange on the tube is about two inches in diameter, and being flexible, fits air-tight against the skin. The primary object of the flange is to prevent the tube from falling in, but it has another important purpose. It can be managed in such a way as to cause a suction on the cavity, and thus expand the lung and help to bring it out to the walls of the chest. The technic of this suction is as follows: The irrigation being finished, the flange is pressed against the wet skin. Cause the patient to draw a full breath and then holding his breath, i. e., holding his larynx closed, let him make the muscular effort of expiration. The air in the pleura will rush out, and probably a little retained irrigation fluid. At the acme of the expiration place the end of the index finger on the

Fig. 1.—Andrews' Flanged Empyema Tube.

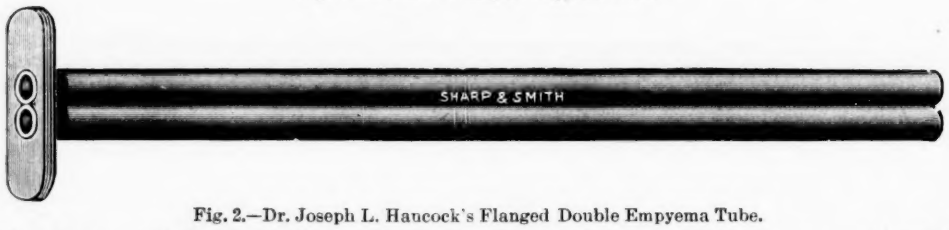


Fig. 2.—Dr. Joseph L. Haucock's Flanged Double Empyema Tube.

orifice of the tube. Then let him resume his natural breathing. Then again drawing in a full breath, let him close the larynx and again expel air through the tube. In three or four such efforts a considerably strong vacuum will be produced, so that the suction will be felt by the finger on the tube. At the close of the last expulsory effort set in the cork, and put the compress on and secure it with the bandage. The wet rubber flange acts as a perfect air-tight valve and will maintain the distensive suction on the lung for hours. This is simple and effectual, and far better than the mechanic stopcocks, siphons, etc., devised for expanding the lung.

Fig. 1 is the flanged empyema tube which I usually employ. It is of soft rubber.

This tube is also extensively used for drainage of all large cavities, as in suprapubic cystotomy, lumbar abscess, etc.

Dr. Joseph L. Hancock of Chicago has devised the flanged double empyema tube shown in Fig. 2. In trimming it for use cut the inflow tube long enough to reach the deeper parts of the cavity, and the outflow tube as short as is consistent with reaching the inside of the thoracic wall. If both are left of the same length, too much of the fluid flows straight across from one tube to the other without washing out the distant parts of the cavity. If a suction valve effect is desired for expansion of the lung, Hancock's tube requires to widen the flange by sewing under it a larger disc of soft rubber. The flatness of Hancock's tube fits it for insertion where the intercostal spaces are narrow.

If, however, there is a fistula from the pleura into a bronchial tubule, neither these nor any other device will maintain the vacuum. In a case having bronchial fistula, the irrigation has to be managed very carefully so as not to choke and distress the patient by the solution entering the lung. However, by cautiously trying different attitudes, a considerable washing out can be secured, with an excellent ultimate success. The bronchial fistula gradually closes and the irrigation is then unhindered. In nearly all cases there is plenty of room in one place or another between the ribs for the insertion of a tube without resection. If there is not, a notch may be nipped in the upper border of a rib. In a few days the cavity generally becomes sterilized, pus nearly ceases to form, just as in all other sterilized abscesses, and then the irrigation can be less frequent. At the same time the hectic disappears, the patient gets out of bed, becomes fat, rosy and strong, and generally recovers permanently.

There is a class of cases of this sort in which the cure is a little delayed. A false membrane sometimes covers the surface of the pleura. In that case the formation of pus is not arrested at first, but continues a week or more longer than usual. At length, however, the membrane begins to come away in bits and patches until it is all gone. Then the antiseptic arrests the suppuration as usual and the cure proceeds.

Let no one suppose, however, because resections are rarely needed, that they are never to be performed. Sometimes there is necrosis on the inner side of a rib, or caries in an adjacent vertebra, or abscesses leading in from other adjacent organs which need exploration with the finger, the probe or the eye, and sometimes there are old neglected cavities whose walls are stiff and firm, with thick cicatricial tissue which must be dissected away, or large portions of ribs must be resected to make the thoracic walls flexible, so that they can be folded in to fill the hollow. I am not urging that operations on the ribs shall never be performed, but only calling back to the memory of surgeons what we all knew before, viz., that most new cases are curable without resection. Even in some tubercular cases, tubing and irrigation succeeds perfectly, just as laparotomy does in tubercular peritonitis.

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## PHYSICAL EXAMINATION OF RAILWAY MEN.

Read before the Fifth Annual Meeting of the American Academy of Railway Surgeons, held at Chicago, Oct. 5-7, 1898.

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When first making an investigation of this subject, about twelve years since, I was surprised to find its complete non-existence except in two systems of railway in which, for the purpose of insurance, examinations were made, but with no reference to service further than this might reach. In both instances there was then no examination made of vision or color perception. Gradually this has changed from an examination first made from a special train, and very hastily, until now, when a few railway systems employ competent examiners to make the tests; but I think there is yet great room for improvement. The recent examinations for service in the volunteer army demonstrated that there are many defective men, and if the temporary service in this war required such physical perfection, certainly the long and arduous service on a railway ought to require men of as perfect physical conformation as can be secured. This scarcely admits of argument.

The examinations that were first commenced by myself consisted only of eye tests for color and correct vision. At that time, on account of strikes and disturbances of all kinds, it was not deemed best to attempt a full physical investigation of each man, but we soon found that the men considered the examination in its true light and understood that it was for their own good, quite as much as for the interest of the railway company. There were nearly twenty-five hundred cases examined of men then in the service or coming in during this period, of which about 2.5 per cent. were deficient in color sense and a less number had other defects of vision.

It always accorded with my observation that there was a special need for a very careful physical examination of men in this service, and great pains ought to be taken to prevent men with stiff joints, deformities from previous injuries or defects, either congenital or from disease, from entering the service. It would hardly be necessary to give instances of disaster in which such cases are neglected, but only to emphasize the fact of care being very needful in selecting examiners and the uselessness of any but medical men who have made the subject a study. Examinations should be made on carefully prepared blanks and not at haphazard. In other words, the medical part ought to have a definite set of questions covering all necessary points, thus making the record specific. I would also suggest that a complete set of Holmgren's worsted would give a better record of color sense than a partial one. And if these yarns are in the hands of properly instructed examiners they can not fail to give correct results. I have had

my suspicions aroused in some cases that men are liable to learn the numbers or letters on the brass tags fastened to the skeins and thus wholly defeat the object of the examination. There should be but one method of recording these color tests and regarding examinations for perfection of vision. The usual fraction as represented by the type read at twenty feet is always clear.

In this connection I would like to comment on a recent letter in the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION. The writer evidently misunderstands the objects of examination. We do not attempt to make diagnosis of disease, nor is it required to examine the eye with an ophthalmoscope, but we want to know if he can see the proper color correctly and is able to see clearly at a distance. The old employes on railways are allowed to wear glasses and have any defects corrected by such artificial means as they can obtain. There is no intent on the part of the company to cause any hardship, but the design is merely to protect the public and themselves. These examinations can be made, however, by others than oculists and be quite satisfactory. We have used for years complete sets of Holmgren's worsted, and later, a modified set. I would also say that we require a matching and under no circumstances a naming, of color. As to repeated examinations, these are only necessary when the men give evidence of disease, and then they are very likely to consult proper medical counsel. As to new men for service, under no circumstances should they be accepted unless they are free from all defects. There is no sentiment in such case, no consideration for past services, but the idea is that of selecting the best only.

I have ventured to make a blank for examinations that is intended to cover some of the deficiencies of our present one and to meet the necessary requirements, as I find the tendency of examining surgeons to answer no questions unless specifically stated.

SURGEON'S CERTIFICATE.

In examination of . . . (Applicant should write his name here.) . . . for service in . . . Railway Co. as . . .

Height, . . . ft. . . . in. Weight, . . . lbs. Rate and character of pulse . . . Is he deformed or maimed in any manner? Give particulars . . . Are his defects from disease or accident? . . . Is he a pensioner? If so, for what cause and how much pension per month is he receiving? . . . Has he any disease either of brain, nervous system, chest, including heart and lungs, abdominal organs, skin, ears, eyes, joints or muscular system? . . . Examine each eye separately with Snellen's test type and give results for right eye . . . left eye . . . both eyes . . . Examine with Holmgren's yarns and give his vision for red . . . blue . . . green . . . rose . . . yellow . . . State distance in inches at which he can hear the tick of watch. Right ear . . . inches; left ear . inches. Can hear ordinary conversation at . . . feet. Do you recommend him for service in this company? . . . If not, give reasons . . . Signed . . . , Surgeon.

In the first place the man should sign his name in the presence of the examiner as a needed identification. His general appearance as to health and habits is very important, as the trained eye of the surgeon can oftentimes judge as to his fitness by this means alone. And in a general way the man should be examined on a plan somewhat after the manner of that used in military service. A glance at the naked figure will give much information otherwise not obtainable. Particular attention is in this manner called to deformities and defects. Hernias are easily seen. Varices and other diseases become at once matters of record.

In the examination of the eyes I much prefer a full set of the usual worsteds and an avoidance of tags and numbers, for the reason that some examinations that have come into my hands show too much of a similarity of one man with another, so much so, in fact, that they might have been copied continuously. At my directions the following instructions were sent out to examiners by the general superintendent *of one system:*

In addition to the questions to be answered in the blank the following rules for examination should be observed:

DEFECTS THAT DISQUALIFY.

1. The wearing of glasses in railway service applies only to old men in the service. Under no circumstances should new applicants be admitted who have defects requiring the use of glasses. Examine men who have been long in the service with proper glasses if necessary, and if they have not been fitted so as to have proper vision they should be before continuing their occupation.

2. Examine carefully, noting defects or disease, such as those afflicted with paralysis, epilepsy, any defects of mental powers, also emaciation, if present, from what caused, habitual cough, disease of lungs, stomach, bowels or kidneys.

3. Note such defects as hernia, lameness, loss of hand or foot or any part thereof, or any deformity; also note character of pulse, whether intermittent or not; and whether the examinee is afflicted with chronic ulcers or open sores.

4. Note the general appearance of applicant, as to his habits, whether dissipated or not, and if he appears to be healthy or otherwise.

If in the examination of men already in the service you find any particular symptom or indication which you are in doubt about, or which on rigid adherence to the rules laid down would be sufficient to lead you to recommend his dismissal or the change of employment, please make a special communication to me (the general superintendent) on the subject, but do not let it appear in your examination, as we desire to be as lenient as possible with our old employes, so far as is consistent with safety.

Now, I have the further suggestion in closing, viz., that all of this work should be reviewed and passed upon by a chief surgeon before going to the operating department of the railway company. The plan now in use is, when there is urgent need, for the man to be put at work on probation, pending his report. But I find in some quarters there is no report ever made to the superintendent, and as a consequence he is left entirely to his own resources. This should be remedied, and it can be very easily by merely sending reports to the head of the surgical department and let him check them. This will soon overcome any tendency to carelessness on the part of examiners and result only in the good of the service.

DISCUSSION.

Dr. T. B. LACEY of Council Bluffs, Iowa—It occurs to me, having had experience along the lines mentioned in Dr. Pritchard's paper, that it would be difficult to take issue with him with reference to the position assumed in his paper. I am fully in sympathy with him. The proposed employe of a railway company should be in good physical condition and in full possession of his special senses, especially sight and hearing. He should be in such condition as to insure the safety of passenger, employe and property. There can be no question that an employe should be able to distinguish different colors, the import being that he will distinguish colored lights that are used on switches at night and light signals that may be given. This enables him not only to protect the passengers on the trains of the railroad company, but it is a protection to the individual himself, because it is easy to conceive how and why an employe who is color-blind might perhaps lose his own life as a result of that condition, and he needs all the special senses.

The Doctor spoke of the watch test and of the distance at which the tick should be heard. Personally, I do not like the watch test, for the reason that if we take the watches we will

find no two of them will tick with the same degree of distinctness or loudness. Of course, I realize that the watch test is universally employed in making these examinations, and you have a person apparently on your paper that would come up to the standard, but your standard is not perfect; it is not equal in any respect. It occurs to me that the only reliable test is that of an ordinary conversation. This can be tried on each ear just as well as the watch test. There can be no question whatever as to the condition in which a man should be physically. I know from personal experience that an employe with an imperfect hand, whether it be from disease or from accident, is much more liable to injury in coupling cars than one having a perfect hand. We know, too, there is a greater liability to injury if there is a deformity of the foot or of the limbs, or any disease existing which practically interferes with good and rapid locomotion. If a ruptured individual is required to perform a certain act that must be done quickly and certainly, the exertion may bring down the gut, even if a truss is worn, and the resulting intense pain may render him unable to complete the movement undertaken. Consequently there is a large element of danger in all these cases. The roads that do not require some form of physical examination for proposed employes are losing sight of their own interests.

Dr. W. L. Smith of Streator, Ill.—In regard to the watch test, I think if you have your own watch and make a comparison between the men and yourself how far you can hear the tick of the watch, you can very nearly ascertain the correct distance of hearing. I use a stop watch, the same kind of watch that race track men use, and I find it is much better than the ordinary watch that we carry around. As to examinations of the eye and for color, etc., I believe these examinations should be as thorough as those for the military service. I have helped to examine probably eighteen thousand men within the last six months, and we used the letter test. If a man has good vision in the right eye and in the left half vision, he is allowed to pass, but I do not believe that that is sufficient for railway service.

Another condition not spoken of in the paper, and one of great importance to railway companies, is flat-foot. A man with such a deformity should be disqualified from entering the railway service. The average switchman does as much walking in a day as an ordinary soldier, and if he has flat-foot, his feet give way, and it is the cause of many accidents.

Dr. D. S. Fairchild of Clinton, Iowa—I quite agree with the essayist as to the examination of railway employes, and I am quite in accord with the proposition to give the examining surgeon a certain amount of latitude in conducting those examinations. It is difficult or impossible for the examining surgeon to secure the best class of men outside of answering categorically a series of questions given by the examiner. These examinations for the railway companies should be placed in the hands of those in whose opinions they have entire confidence, even if they are not always conveniently located. It may happen that at headquarters men are not thoroughly competent to make these examinations, and if this be true, they should be conducted by some one not at the headquarters, but one who is competent to do the work. In the last four years I have examined four hundred men for employment on railroads, and I have found that curious things would crop up. As to color-blindness, I find that in mixing the colors great confusion would be created, and after several subsequent trials the men would be able to make a proper selection of the colors. And so it is difficult to determine always whether a man is really color-blind, or color-ignorant. I have a case in mind of a man who a year ago came for examination and was rejected because of color blindness. At least, I thought he was color-blind. He appeared at the office recently, I examined him again, he confused the colors, and was again rejected. He asked for further examination, came to the office, and after several trials he was able to pick out colors properly. I had suspected that the man had learned the figures on the pads, and I gave him a period of probation, giving him to understand that he was all right, but I did not make out his final report. A month later I sent for him again to come to the office and go through an examination with the colors, and I watched particularly that he should not be able to see the numbers on the tags, and he picked out the colors correctly without hesitation. The carefulness with which I watched him, and the length of time which had elapsed, convinced me that the man had actually learned the colors, and that at first he was not really color-blind, but color-ignorant. Instances of this kind will come under our observation, and I have become convinced, after two or three similar observations, that it is difficult for the examiner to determine whether a man is color-blind or color-ignorant. I have treated all these cases as color-blind, permitting the applicants for railway service to appear for re-examination, advising them during the interval to study the colors, to learn them as well as they could before appearing the second time, and I have found some of them were able to pick out the colors properly.

In regard to the test for hearing, it is not altogether a question of whether an individual can hear properly at the time of the examination, but I am told by aurists that the tick of the watch is the best test as to the condition of disease. An individual may appear for examination and hear a watch only two or three inches distant, yet he hears conversation well at twenty feet, and this would not disqualify him. The question comes up whether or not failure to hear a watch tick at a certain distance does not indicate some aural disease which is going to become more serious and make the man very deaf in the future. I have no personal knowledge of this matter, but I have been told so by gentlemen who have given this subject special attention.

Dr. M. Gardner of San Francisco, Cal.—I am very glad to have heard this paper, and it ought to be placed in the hands of every chief surgeon of a railroad. In our own company we have been making physical examinations for four years. During the last year, up to June 30, the number of examinations made was 2294. Of this number only 62 per cent. passed perfect examinations. They were mostly of about 45 years of age; 18 per cent. were imperfect, but still not sufficiently so to disqualify them from entering the service, and 20 per cent. were rejected. Of this number we rejected 3.5 per cent. for color-blindness; 4 per cent. for hearing, and 2.5 per cent. for distant reading vision. We go a little further in our examinations than anyone has mentioned today. For instance, we insist on distance vision examinations all the way from 20 to 1000 feet. A man is supposed to see a signal light distinctly at a thousand feet. He is also supposed to see No. 20 test type, on standing, at 20 feet. We further examine them as to reading vision at 14 inches. Every engineer reads his orders at fourteen inches without glasses.

In regard to examinations for colors, a man who is color ignorant ought to be rejected. A man who is also ignorant enough not to call colors when he sees them, ought to be rejected. So we treat such men on the same grounds.

As to age, we accept none over 50, and this year will terminate that by reducing the age limit to 45 years. In our physical tests we have rejected train operators, flagmen, switchmen, and yardmen. As to hernia, varicocele, heart trouble, and deformities, we reject fully 10 per cent. in our physical examinations. We accept a hernia after two years' standing. In the case of varicocele we accept a man as soon as he is able to leave the hospital. We do not allow our surgeons to operate on a man who has been rejected after a physical examination, as a matter of policy. As to hearing, we furnish our own watches. I select them; we use the ordinary nickel plated stop watch. These watches are furnished to all surgeons on the roads with which to make their examinations, so they are all alike. We furnish every surgeon with a supply of the tests with which to make examinations, from one end of the line to the other. We have twenty men to make the examinations.

I recall an instance in the southern part of our system where the examiner failed to strip the applicant, something which we insist on. The man pushed his pants down, and did not take them off, the pants covering a bad ununited Pott's fracture. I recall another case in which a man had an artificial foot, covering it up by pushing his pants down. I simply mention these cases to show you what men will resort to in order to get in the employ of railroad companies.

Of the 2294 cases that were examined last year, we rejected 441 for all causes. We rejected 4.19 per cent. for distant vision, 2 per cent. for errors of refraction, 2.6 per cent. on account of not being able to read at fourteen inches, for defective hearing 5.98 per cent., color sense 3.5 per cent., and for general condition about 10 per cent. Nearly all the men were under 30 years of age.

In making physical examinations we have printed rules and regulations which we furnish to everyone. We insist on having applicants stripped. We take no chances on anything. Each applicant has to undergo a thorough physical examination; if he is under weight, we will reject him. We want able, sound men. The number of surgical cases on the Southern Pacific lines has materially diminished in the last three years as the result of the solid, sound men we have admitted.

Dr. D. C. Bryant of Omaha, Neb.—This paper has brought up some interesting points. The question of an applicant being examined by some one he knows or by some one he does not know is of more importance than one would think at first. In examining employes for the Union Pacific Railroad, I have been called upon to examine a great many strangers. I have had men who were strong, physical athletes, come into the

office for examination. Shortly after placing the color skeins before them and having them sit down to watch the colors, the perspiration would roll off their faces, and they would appear to be very much frightened and often confused about the colors. Now, the boys that live in Omaha and who are acquainted with me, come to my office and pass the same examination without any trouble, without any sweating. Examinations with the color skeins are not a great success. In my own office I have a dark room in which I can test applicants with different colored lights. If an applicant fails with the colored skeins, I take him into the dark-room and use a flashlight, such as he would be required to use in his work, and I can then determine whether he is color-blind or not; whether he can distinguish green, red, blue, and white, as he should be able to do in his work. Many of the applicants for railway service that we at first suspect to be color-blind are not. After passing an examination in the dark-room, and the excitement has subsided, these applicants will match the skeins without much trouble. If I understood the Doctor correctly, he stated in his paper that the old employes were allowed to wear glasses for distance.

Dr. PRITCHARD—Yes, sir.

Dr. BRYANT—I think that is a mistake on the part of the company. If an employe has an error of refraction, if he has 2D. of hypermetropia, he is a much better man before he attains the age of 40 years than he is after that age. Before he attains 40 years of age his accommodation is good; he can overcome 1D or 2D. of hypermetropia and have good vision for distance. After this age he loses the power of accommodation, and his vision for distance becomes poorer and poorer.

Speaking of trainmen, I do not believe any man should be allowed to use glasses. If his vision is not good for distance, he should be given some other employment in the service. Of course, men who have been in the employ of railroad companies for years should be treated well. Reading orders is a different thing. An engineer can use his glasses for this purpose, and then remove them; at the same time, if the distant vision of an engineer is poor, not knowing how soon he may break his glasses, or how soon they may get frosted or dusty, it becomes poorer, and a wreck may result in consequence of it. Such men should be taken off the train service and put in some other branch. The rule of the railroad represented by Dr. Gardner, of not employing men for train service after they have reached the age of 45 years is better still.

In considering the question of hearing, I believe the watch test is the best of all for one portion of the test, but we should not stop with the watch test. The average watch tick gives us a high tone. Many applicants for positions in the railway service can hear high tones, but not low ones. Let them be thoroughly tested with the watch, the voice, and the tuning fork. I give them a fair range. I do not take every tone in the gamut; but you will find many men who hear high tones, but not low ones, and vice versa. This usually means that there is beginning trouble in the internal ear, and this is a serious matter. An applicant who is examined today and hears distinctly high pitched tones, in six months may be unfit to enter the railway service. Railway employes should be examined at least once a year, and should not be let go until some accident occurs, and then be re-examined. No employe should be considered to be perfect next year because he is this year. He should be examined yearly, especially as to sight and hearing.

Dr. D. S. FAIRCHILD of Clinton, Iowa—The limit of the Chicago & Northwestern road for men entering the train service is 27 years of age. The question which I raised in my previous remarks, and which Dr. Bryant partly answered, was with reference to men not hearing a watch tick at a certain distance who were under 27 years of age. We know that there are men engaged in machine shops and boiler shops who are accustomed to noises for a long time, and it is impossible for them to hear a watch tick, yet they can hear ordinary conversation well. I refer to men who are not exposed to such noises, who are under 27 years of age, but who may have a mild form of internal ear disease which may give rise to serious results later on.

There is one other point. The Northwestern Railroad Company has adopted a system of examining engineers over 50 years of age. As soon as a man reaches that age his eyes are examined. There are only a few of them whose eyes are normal. Occasionally an engineer will be found with vision of $^{20}/_{20}$ who is 50 years of age. If the vision of these men, after reaching this age, is below $^{20}/_{30}$, then they are required to wear glasses.

Soon after I undertook the examination of these men, and they began to wear glasses, they told me that at night they could not see as well with glasses as they could in the daytime. Contrary to the instructions of the chief medical officer of the company, I advised the men to take off their glasses at night. After a while I had to wear glasses, and I had a practical demonstration of it myself. I always take off my glasses at night because I can not see as well. We can not discharge engineers over 50 years of age whose eyes are slightly defective. Those are the men who are usually in charge of our passenger trains. I am inclined to believe that we should make some allowance for these slight defects. We should consider the intellectual capacity of these men. We find men who will pass an excellent physical examination, yet who are intellectually incapable of taking the responsibilities of trainmen; and we find men who are slightly defective in vision, and are bright intellectually. I am inclined to stretch a point in the cases of such men. Their intellectual caliber makes them valuable, and they are better able to assume responsibility. They make better men than those whose eyesight is perfect, but who are intellectually inferior.

Dr. R. HARVEY REED of Rock Springs, Wyo.—I am very glad I have been here this morning to listen to this interesting discussion and the instructive paper. The question of physical examinations of railroad employes has been discussed more or less by the different roads of the East, but to the best of my knowledge with no such thoroughness as it has been by western men. It is a subject which should interest the management of every railroad, because it is a protection not only to the employes, but to the passenger and the company.

The service inaugurated by Dr. Gardner on the Southern Pacific road is a practical innovation, and I think every trunk line ought to have most carefully selected employes, and such as we only get by careful examinations, as has been suggested by the author of the paper, and by those who have participated in the discussion. I think it is an innovation which should be pursued by the management of railroads in such a way that they will realize the benefits of it, and if our discussions in this Academy accomplish this one thing only, the year will have been profitable.

Dr. PRITCHARD (closing the discussion)—I feel very much gratified to have had this subject so thoroughly discussed, and have but little to note in my closing remarks. As Dr. Fairchild has told us, the C. & N. W. vision standard is $^{20}/_{20}$ for new men under all circumstances. As to the watch test, there is nothing more practical in my opinion. We can not furnish tuning-forks. If we do that, they must be of one pitch. The watch test, with ordinary conversation at twenty feet, will cover the question of hearing in a practical way, and there is very little more needed.

One of the speakers referred to passing a man with flat-foot. Any man who would pass an applicant with flat-foot ought not to be an examiner for a single moment.

There is one point that has occurred to my mind very often, and probably to the rest of you, and that is, that there should be a standard as to colored lights. Railroads oftentimes have all shades of red, from a dark to a bright red, in use at one time. I have had men select colors according to intensity, and this was the only way by which they could understand signals at all. I had one peculiar case quite recently. A man was referred to me for examination who had been a station agent for about fifteen or eighteen years. He turned his red light after the train had passed, went home and left it, and stopped all trains for that night. The question of distinguishing colors came up, and he was referred to me for examination. I found him so near-sighted that he could not see anything at two inches from him, and could not even be fitted with glasses to improve his vision. Such men need to be weeded out of the railway service.

A very important point is to see that all reports are sent to a competent surgeon to check over before they go to the operating department. When this is not done, great confusion results.

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## FRACTURE OF PATELLA.

Read before the Fifth Annual Meeting of the American Academy of Railway Surgeons, held at Chicago, Oct. 5-7, 1898.

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CHIEF SURGEON, C. & E. I. RAILWAY.

CHICAGO.

Fractures of the patella are not of frequent occurrence; they constitute about 2 per cent. of all fractures, and are found more frequently in the male than in the female—in the proportion of about five to one. Fractures of this bone demand careful consideration,

on account of its close proximity to the knee-joint, and also in consequence of the imperfect way in which the fragments unite; fracture of the patella is caused by muscular action or direct violence. The direction of the fracture may be transverse, vertical, oblique or even stellate. In the fracture produced by sudden and violent muscular contraction, the transverse variety usually occurs; when the fracture is caused by direct violence, the direction may be vertical, transverse, oblique or stellate, or the fracture may be comminuted. In fracture of the patella the knee-joint is always opened, unless the extreme lower end of the patella is broken, in which case it is possible for the fracture to exist without the joint involvement. In most fractures of the patella there is not only opening of the knee-joint, but the fracture has also associated with it a tearing of the aponeurotic and fibrous coverings of the bone, as well as a laceration of the synovial membrane of the joint, and a rupture of the prepatellar bursa; in consequence of the peculiar nature of this injury the joint is soon filled with blood, and the synovial secretion becomes abundant. The signs of fracture of the patella vary somewhat, according to the manner in which the injury occurred. Crepitus is generally absent in this fracture, on account of the separation of and the intervention of fibrous tissue and blood-clots between the fragments, the patella is lengthened with a well-marked sulcus, with ecchymosis, and swelling rapidly, appearing with a loss of the general contour of the joint. The usual mode of union, to which, of course, there are exceptions, by the older methods of treatment, is not osseous, but ligamentous or fibrous, with separation of the fragments; many ingenious and complicated devices have been invented by surgeons of reputation, all striving to accomplish the same object—to bring the fragments together and retain them in apposition until united—but almost without exception the union was fibrous, with separation of the fragments.

If by any device externally applied the fragments could have been kept in apposition, with our present knowledge of antiseptic surgery it would not have been up-to-date surgical treatment. The extravasated blood should be removed from the joint; that, with the lacerated aponeurotic fibrous tissue between the fragments, would prevent bony union. In some cases it was possible with some of the older devices to bring the fragments well together and retain them sufficiently fixed, yet the result was almost universal—non-union of bone. It was not position of the fragments alone that prevented union, but the condition of the joint filled with blood-fluid, with torn shreds of tissue between the fragments.

I believe that in every case of fracture of patella with extravasation of blood and fluid into the joint with rupture of the capsule—which is the case in almost every fracture of the patella by railroad injury—the joint should be opened and thoroughly cleansed antiseptically and the fragments then sutured together. Before any method is resorted to with a view of bringing the fragments into apposition, the surgeon must endeavor to control and modify the joint inflammation. For this purpose the usual treatment of cold application by ice-bag or cold irrigation is very generally resorted to; where there is a good deal of superficial ecchymosis, warm antiseptic fomentation is applied. You should never operate on fractured patella immediately after the injury has been received. The object of the preparatory treatment having been attained, the question as to the method of operating will next claim the surgeon's attention; this should, to a certain extent depend upon the nature of the fracture, whether simple, comminuted or compound. Yet, when accompanied with the usual complication of hemorrhage and joint injury, the operative procedure should be the same in either case. Should the fracture be compound, the operation should be performed immediately after the accident. Every surgeon will recognize the necessity for strict antiseptic precaution before, during and after the operation; the slightest mistake or carelessness in the minutest detail of the operation may cost a limb, or even a life. At the present time very few, if any, surgeons resort to the various ingenious external devices (with which you are all familiar); but rather open the joint, thoroughly cleanse it, render it aseptic without a doubt. then suture the fragments together. There are several points to be carefully attended to during the operation, First, decide what material to use for sutures. Silver wire has been generally used for the past fifty years as the material most suitable for the permanent fixation of the fragments. When this mode of treatment has been resorted to, whatever the material used, it is with the view that it shall remain permanently. The results attained from the use of silver wire have generally been satisfactory, but in a few cases the result did not fill expectations, the wire acting as an irritant—suppuration and failure being the result.

For some years I have used chromicized catgut for sutures, and have always found it fulfilled every indication required as well as silver wire, and was free from all danger. The incision can be either longitudinal, transverse, crucial or semicircular. I favor the semicircular, with the opening to the outer side. The fragments and the joint are freely exposed, and all blood-clots from the joint, from the synovial pouch under the quadriceps muscles and from between the fragments are removed. The intervening tissue of the anterior fibrous capsule is elevated from between the fragments; the two fragments are refreshed by being scraped. The drill is now made to perforate the upper and lower fragments (care being taken to have the point of the drill emerge from the lower surface of the patella just above the lower cartilaginous surface). If silver wire is used when the fragments are in apposition, it is twisted, cut off and hammered down upon and into the tissues over the line of fracture, chromicized catgut being used, passing it through the drill holes of the upper and lower fragments; they are brought snugly together, the ligature is then tied. The aponeurotic fascia and soft tissues in front of the patella are nicely sutured, which procedure hermetically seals in twenty-four hours the front of the joint from any discharge infiltrating through the tissue made by the fracture from the soft parts over the front of the patella. All loose pieces of tissue are removed, and any torn or lacerated shreds are cut away. The semicircular flap of integument is now sutured and the line of incision is closed. The linear incision can be painted over with a layer of styptic collodion and then dusted over with iodoform, after which a posterior splint and other external dressings are applied in the usual manner.

The success of this operation depends wholly upon conscientiously carrying out the smallest details of antiseptic surgery.

DISCUSSION.

Dr. W. W. GRANT of Denver—The unequivocal statement of the essayist that all these cases can be treated by wiring the fragments demands consideration. While it is a fact that Lord Lister established the aseptic treatment of wiring the patella on a sound and enduring basis, I will say that I went through the wards with him in London eight or ten years ago and observed his cases, which he took great pains to explain in detail, and his practice was to use large silver wire. I never saw a case of suppuration, and always a good result. The probabilities are that he would not have the same results with the same treatment today. Yet it is a fact that the profession is not now agreed that it is wise to make a compound fracture of a simple fracture of the patella in order to wire it. As a matter of fact, the result of close ligamentous union is not bad; if the patient has not that bony substantial union that he would have by successful wiring. It must be remembered that, in spite of antiseptic precautions, infection sometimes gets into these wounds, and if such should be the case, there will not only be imperfect union but an ankylosed joint, and surgeons hesitate very much to convert simple fractures of the patella into compound ones. I do not believe such a recommendation would be safe for general adoption. It must be admitted, too, that if the case should fall into the hands of a skilled surgeon, who is always careful to carry out every aseptic precaution, the result will be gratifying, but this will often not be the case, and if it is once generally known as the ultimatum of the profession, that in cases of considerable effusion of blood into the joint the joint should be opened, the clots of débris turned out, and the fragments wired, we are going to have some bad results follow which will bring the operation into disrepute. There is no question but that in compound fracture of the patella, the patella should be wired at once. In those cases where we have considerable laceration of the soft parts, extreme distension, with effusion of blood, it is wise to open and turn out the blood-clots; but in cases seen around the elbow-joint these can be dealt with very well by aspiration. At the present time it is hardly a safe dictum that we should convert simple fractures of the patella into compound ones for the purpose of wiring the fragments together, in order to get bony union, while under our present methods of treatment we can secure close ligamentous union with very good results.

Dr. FRED J. HODGES of Ashland, Wis.—The essayist failed to drawn a distinction between those fractures produced by direct violence and those produced by muscular effort. It is well known that osseous union is practically unknown in those injuries which are produced by muscular action. This field of surgery was illumined by the work of Macewen, who in 1883 called attention to the fact that in fractures caused by muscular action, the posterior thick and elastic covering of the patella stretches before it gives way; that these fibrous bands are brought into apposition when the fracture is reduced, causing a heterogenous new-tissue formation at the site of fracture, that is, fibrous tissue between the two bony surfaces. In such cases the main consideration is not so much the suturing or the method by which the fragments are approximated as it is the removal of this incarcerated fibrous material from between the fractured ends which is interfering with bony union. To become dogmatic and say that every such case should be operated upon, is going too far, as is shown by the course of the eminent authorities now in charge of the case of the Prince of Wales. He is under the care of Macewen, who practically originated suturing the patella, but is being treated by the older methods. There are certain conditions of the body of the royal patient which contraindicate his being treated along the operative line.

In fractures produced by direct violence there is comminution, but no stretching or incarceration of fibrous tissue, and in such cases we may reasonably expect firm bony union from any method which will bring the surfaces of bones into apposition. Intervening fibrous tissue must be removed if you seek bony union, and incarceration of tissue always occurs where the injury is the result of muscular action, which, of course, constitutes the great majority of such injuries. A body which would become authoritative in its field could hardly commit itself to the proposition that every case of patellar fracture should be operated upon, and to that extent I take exception to the paper.

Dr. W. J. MAYO of Rochester, Minn.—I was very much pleased and interested in Dr. Jay's paper. Dr. Hodges struck the keynote when he said that in those cases of fracture of the patella caused by indirect violence the difficulty in securing union is from the interposition of fibrous tissue between the broken fragments. Macewen gave us the reason why in some cases of fracture of the patella we had considerable separation of the fragments and still good functional use of the joint secured. It is because that portion of the anterior ligament, of which the patella is but a part, is separated, while the lateral expansion of the tendon holds the joint in good position.

Another point to be considered is the best time for operation. The knee-joint is a good deal more dangerous than the peritoneal cavity, the reason for which is its liability to infection. In addition to that, it has not nearly the power of protecting itself that the peritoneal cavity has; it has not the lymphatic supply. If we get infection of the knee-joint, we may not only lose the joint but the patient's life. A slight infection of the peritoneal cavity would be harmless as compared with a similar infection of the knee-joint, for the reason that nature has not prepared that protection by which she provides a certain immunity from infection and traumatism in the peritoneal cavity. As to the time for operation, we will be governed largely by the condition of the skin. If the skin is not bruised we can operate at any time, but if it is bruised or covered with blisters, on account of the liability of carrying infection into the joint, surgical intervention should be delayed until a more favorable opportunity presents itself. In connection with operation, I do not think the finger should be allowed to touch the wound. Soiled fingers, which can not be avoided in the peritoneal cavity and are practically innocuous under ordinary circumstances, in the knee joint prove dangerous. The method of working entirely with instruments is good, sound surgical practice.

Dr. JAY (closing the discussion)—I do not know that I have anything in particular to say in my closing remarks. Probably most of you consider the paper a little radical. However, as I said in my paper, when there is a fracture of the patella, with pain in the joint, effusion of blood and synovial fluid in it, ecchymosis, etc., I have no hesitation in opening into the joint, cleaning out the débris, stitching the fragments together, believing that I will have a good result. I call it good surgery to do this. If the lower end of the patella is broken off, does not penetrate the joint, and there is no effusion of blood or of synovial fluid into the joint, there is no necessity for opening the joint. It is not good practice to let a knee-joint filled with extravasated fluid or blood with fibrous tissue incarcerated between the fragments go unoperated. By external applications you can not get the fragments together, nor would you get bony union in such a case if the fragments could be brought into apposition. The interposition of fibrous tissue or of other material between the broken bone certainly prevents you from bringing the fracture in apposition.

Dr. GRANT—What would you do in a case where there was no interposition of material between the fragments and there was simply effused blood?

Dr. JAY—You do not wait for the interposition of fibrous tissue. I have operated on fracture of the patella for the last fifteen years, and I have never had an unfavorable result. Before I had carried out the treatment I have described I had the fragments one and two inches apart, particularly in the cases of old men, and they needed a support all the time. I do not operate on every fracture of the patella where the knee-joint is opened, the aponeurotic structures are torn, and there is an effusion of blood. I have had three cases in the last six months in which the fractures were caused by external violence. These were railroad cases. In one case in particular, the fracture of the patella was caused by a railroad tie falling on the man's leg. I did not see him for five or six days after the injury, at which time the knee-joint measured twice what its fellow did. I could not tell definitely whether there was a fracture or not at that time. He was brought to the hospital, hot antiseptic fomentations were applied to reduce the swelling, and then an incision was made, through which a pint of clotted blood was turned out of the knee-joint. The cavity of the joint was irrigated with boracic acid and bichlorid, the tissues washed and rewashed until they were thoroughly cleansed, and the patella sutured. This treatment was followed by a excellent result in this case.

## THE BACILLUS AEROPHILUS.

### OCCURRENCE IN CHRONIC SUPPURATIVE OTITIS MEDIA.

Presented to the Section on Laryngology and Otology at the Forty-ninth Annual Meeting of the American Medical Association, held at Denver, Colo., June 7-10, 1898.

BY LEWIS S. SOMERS, M.D.

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Zaufal[1] states that a pure culture of any micro-organism is rarely found in the secretion of otitis media purulenta chronica, and as a rule, there is a variety of bacteria, particularly in neglected otorrhea,

where the secretion is stagnant. In acute otitis media suppurativa, pure cultures are found more frequently than when the disease has been neglected and assumes a chronic form; usually, however, various bacteria are associated, the most common being the diplococcus pneumoniæ, streptococcus pyogenes, staphyloccocus pyogenes albus and pyogenes aureus. More infrequently are found the staphylococcus tenuis, bacillus tenuis, micrococcus tetragenus and the bacillus pyocyaneus. That the micro-organisms obtained from the discharge in chronic suppurating otitis at its early stage are the cause of the morbid changes in the middle ear there can be no doubt, but in the form of the disease under consideration the bacteria found after the suppurating process has continued for a considerable time probably bear little or no relation to the primary disorder, secondary infection occurring through the perforation in the membrana tympani.

The following case, in which the bacillus aerophilus was found in pure culture, was discovered during the study of a series of cases of chronic suppurative otitis media, to ascertain the micro-organisms present in the discharges: W. C., aged 10 years, had a suppurating right middle ear since 1 year of age. No cause, such as the exanthemata, could be ascertained as producing the original otitis, and as the boy was a member of the lowest class of society, he presented every facility for secondary infection of the diseased ear. Examination showed the external auditory canal to be filled with foul pus, among which were shreds of gelatinous mucoid material, and after this was removed, the epidermal lining of the canal was seen to be macerated, with the epithelium proliferating and being discharged with the mucopurulent matter in the form of débris. Close to the tympanic ring was a group of bleeding granulations, surmounting a small particle of dead bone; there was a large ragged perforation in the posterior-inferior segment of the membrana tympani, through which a probe could be passed and which grated against necrosed bone in the tympanic cavity.

The pus discharged from the ear presented nothing differing in any way from that observed in long-continued cases of otitis media suppurativa, being of the usual yellowish-green color and possessing the foul odor peculiar to these cases. After the canal had been rendered as sterile as possible, a minute amount of pus was obtained on a platinum point, from deep in the middle ear, and from this a stab culture was made in a gelatin tube; a whitish growth developed in forty-eight hours, entire liquefaction taking place in seven days, with the development of the odor as observed in the patient's ear; the growths then sunk to the bottom of the tube, while the supernatant gelatin was liquefied and turbid. Other cultures made on gelatin tubes, from the pus obtained at different times from the middle ear, presented the same biologic characteristics, and at no time during the examination did other micro-organisms become evident, either from the original culture or during the entire course of the investigations, which extended over several months.

On agar-agar smear cultures there was produced a creamy, yellow colored growth of waxy appearance; there was no liquefaction, and the entire surface of media was covered with the growth. Potato smear cultures showed a yellowish, irregular growth, waxy and dull looking, granular over the entire surface and with a slight odor. A series of gelatin plates were made after the Koch method, and the bacillus on these first appeared in colonies of minute yellow, round and pear-shaped granules, soon surrounded by a zone of liquefaction, which gradually increased in dimensions until the gelatin was entirely liquefied and clear on the surface, the colonies having gravitated to the bottom of the plates. Microscopic examinations were made of the original pus from the tympanic cavity and of the varions colonies developed in the culture-media used at different times; carbol-fuchsin was used as the principal stain in all examinations. From the pus obtained from the ear and original gelatin cultures, slides were prepared after the usual manner, and the bacilli were found in large numbers, to the exclusion of all other forms of germ life. It did not differ from the description given by Sternberg[2], in which he figures it as slender rods of various lengths, about two-thirds as thick as the bacillus subtilis and frequently united in jointed filaments. At various stages in the life history of the bacillus, the size was smaller or larger, depending upon the duration of growth; in the early stages ovoid spores were present in large numbers, and a few hours later the bacilli would be seen as small rods, apparently immature; these would increase in size until the fully developed bacterium was seen.

The bacillus aerophilus is found, as far as has been studied, as an accidental contamination, probably from the air. It is an aerobic, liquefying, non-motile bacillus, with oval spores, and grows on the usual culture-media at the room temperature. It is impossible to ascertain the original micro-organism responsible for the primary infection of this case, but as a mere gratuitous supposition we may venture to suggest that several forms existed at various times during the course of the tympanic suppuration, and at the time the cultures were made the bacillus aerophilus had displaced the other forms of germ life and existed in the tympanic cavity as an individual growth. As a usual rule in the chronic cases, investigators have found a greater number of bacilli than cocci, staphylococci being almost constantly present.

Lermoyez and Helme[3] make the following observations in regard to the infective agencies concerned in otitis media purulenta: 1. Acute otitis media is most often of microbic origin; the pus, obtained first from paracentesis of the drum membrane, generally contains but a single pathogenic species. 2. The streptococcus and the pneumococcus are the microbes usually found; the staphylococcus is rarely found at this period, and is generally found with other species. 3. After a varying period, a secondary infection is often grafted on the primary infection and takes the place of the latter. 4. This secondary infection is the result of the staphylococcus, especially of the white variety. 5. It determines the transition of the purulent otitis media from the acute to the chronic stage. Secondary infection of the tympanic cavity determining the chronic phase of the morbid process may occur either through the Eustachian tube from the nasopharynx, or from the external auditory canal and the perforation in the membrana tympani.

Pez and Gradenigo[4] conclude that general secondary infection of the middle ear is of nasopharyngeal origin and very rarely does the secondary infection come from the external auditory canal through the perforation in the tympanic membrane. This somewhat comprehensive statement made by these observers is true in many cases, but it is frequently found that secondary infection, as in the case here described,

results through the external canal; and usually the infecting material is carried to the tympanic cavity by neglect of aseptic precautions in the treatment of the previous acute otitis.

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## SUPPURATIVE DISEASE OF THE EAR.

### THE PRESENCE OF POLYPI AND GRANULATIONS THEREIN NOT AN UNFAVORABLE INDICATION.

Presented to the Section on Laryngology and Otology, at the Forty-ninth Annual Meeting of the American Medical Association, held at Denver, Colo., June 7-10, 1898.

BY LOUIS J. LAUTENBACH, M.D.

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Some years ago, after having considerable experience followed by rather favorable results with cases of suppurative disease of the middle ear, complicated with granulations and polypi, I reported [1] a few of my cases and drew therefrom the conclusion that "restoration of function in these cases is more frequent as well as more thorough than in chronic suppurative cases of equal duration without growths or polypi. I do not mean to say that this is universally so, but that it is usually the case." When this was written I intended it to apply to benignant growths, not to malignant or specific tumors. After several more years of work of this kind, I find my former opinions concerning these growths but confirmed and strengthened by the additional experience. In this paper I shall speak only of such growths as granulations, granulation tumors, the angiofibromata or mucous papillomata, the fibromata and the myxomata, and do not include such growths as the sarcomata, epithelioma, tubercle, lupus, etc. In the former paper I considered this exclusion as being understood, these malignant growths being very rare, much less than 1 per cent. being of this nature. Again, as designated in my original title, I speak of growths in the middle ear only, not pretending to speak of such as occur from the surface of the drumhead or external thereto.

Of these benign growths, by far the greater number are granulations and granulation tumors, these amounting to more than half the entire total of ear tumors. The next in frequency are the mucous papillomata or the angiofibromata. This is the variety present in about two-thirds of the remaining cases, while the fibromata comprise about all the balance except some 1 or 2 per cent. of the myxomatous variety of polyp. That the far greater number, in fact, possibly all, of these growths are the direct result of inflammatory action is apparent when we consider the conditions under which they develop; for all practical purposes never being present in the middle ear unless there has been an anterior inflammation of the drumhead, with congestion, exudation with suppuration and perforation.

The conditions under which the new growths appear are congestion or inflammation, with the presence of moisture. The latter essential is evidently considered of great moment by the large class of surgeons of today who denounce the use of heated cloths, and especially of hot poultices on the ear during the acute stage of an inflammation, one of their most important reasons for denouncing these being the liability of favoring the development of granulations and of polypi. This moist inflammation or suppuration of the middle ear can further develop in various ways: 1. The inflammation may gradually subside, the exudation lessening, the enlarged and leaking vessels gradually shrinking to a more nearly normal caliber, the diseased tissues proliferating where there has been destruction, and being absorbed where there has been thickening and exudation, and if the process has not been too severe, no fibrous or connective tissue bands having been produced within the ear, the structure as well as the function may be restored. 2. The process may have contined to the stage of organization of the elements of inflammation, with the formation of fibrous or cicatricial bands; and with the cessation of the inflammation and the closure of the perforation, we have healing, with impairment of structure and limitation of function. 3. We may have complete subsidence of the inflammation, with the formation of connective and perhaps fibrous tissues, with a cicatricial healing of the edges of the opening of the drumhead, and with considerable impairment of the structure and function. 4. We may have subsidence attended by necrotic processes, involving the soft tissues as well as the bone, eventuating in great impairment to the ear. 5. We may have it subside only after a most virulent and extensive inflammation, destroying through its violence important ear structures, and perhaps some of the surrounding tissues. Here, of course, destruction of structure is accompanied by destruction of function. 6. We may have the inflammation as it continues constantly producing increased sclerosis or increased necrosis, the amount of the impairment being proportioned to the length and variety of the inflammatory processes. 7. We may have the inflammation continue; and as it continues, hyperplastic processes being at work, new structures appear, giving rise to granulations and granulation tumors, if due to the organization of the inflammatory exudate, and the other forms of benign polypi. when the inflammatory action modifies the normal function of the epithelial and fibrous tissues, stimulating them to a new development of their own tissues in varying forms. This varying development is probably more dependent upon the degree of vascularity present than upon any other factor.

I look upon these new growths as an evidence of an activity of the inflammatory action in a benign manner—not in the way of destruction or of necrosis, not in the way of a general fibrous thickening, not a sclerotic or hardening action, nor yet akin to the process of cicatrization—but rather an effort of nature to extend her benignant healing processes to as great an extent as possible, so that, although the healing will not be a primary one, it will yet be akin to that observed in other parts of the body—the healing by the formation of proud flesh. It allows the retention of the necessary vascularity, the nerve innervation remaining, until such time as, through artificial or natural means, everything is ready for a quick healing, and all we need is to take advantage of nature's open door. Through the presence of this prolonged increase of vascularity and of nerve energy, the various ear structures, the lining membrane of the middle air, the articulations, especially the stapedio temporal, as well as the ear nerve, are better preserved in structure and in function than they would be otherwise. This evi-

[1] Lautenbach, Louis J.: Improvement of Hearing after the Removal of Polypi and Granulations from the Middle Ear. Proceedings of the Pennsylvania State Medical Society, 1893.

dence of inflammatory activity is also an evidence of but little fibrous disturbances or of connecting tissue formation.

In this connection I recall the case of Mrs. Mary C., treated by me in 1884, in whom contact hearing was not present on the affected side, and in whom I found the meatus completely blocked by a papilloma. By removing this, within a few days the hearing was much better, and within one month the perforation was completely healed, and the hearing about normal. In this case, I believe that all the inflammatory action had pretty much subsided except at and near the roots of the growth, but that in this location the violence of the inflammation had centered, and in nature's healing process, this overgrowth occurred, and, mechanically, by its obstruction, and its pressure, it prevented the function of healing being exercised. The growth once removed, the parts in the meantime having been preserved, by a maintenance or exaggeration of the normal vascularity and innervation, they resumed their normal function, and natural good hearing resulted.

The mechanic presence of the growth is in many cases an aid in preserving function by retaining motion of the conducting apparatus through being often thrown into contact with the ossicular chain and vibrating it. It must also at times have some effect in mechanically preventing the formation of fibrous and connective tissue bands in the same way.

That there is present in these cases an increased blood-supply must be evident to all workers in this field. A comparison of the history and appearance of a dozen cases of chronic suppurative disease without such growths, with a like number in which they are present, is convincing, any attempt at cleansing or removal of the growth in the latter class of cases being almost always accompanied by at least slight bleeding. Often when operating on these growths, the bleeding will be so profuse that pressure pledgets must be used to control it. Even when burning out granulation masses with an acid, the bleeding will often be so free as to seriously interfere with our seeing the burned part and its surroundings. The same comparison will likewise give us evidence of a marked deficiency in nerve activity in the non-polypoid suppurative cases as compared with those we are considering, the sensitiveness in the latter being usually much exaggerated as compared with that observed in the former.

As having a bearing on this question, I will very briefly outline the case of Mr. Louis S. whom I treated in 1883 for suppuration, with polypus of the right ear, the result of scarlet fever during childhood. The pain in the ear and head had been excruciating; in fact, on one or two occasions his actions were strange and irrational. He had endeavored to commit suicide, and his family had about concluded that his was an incurable case of brain disorder, and arrangements had been made to commit him to an insane hospital. On examining the ear, it was found closely packed with granulation tumors, which were so exceedingly painful that no attempt at removal was made until he had been etherized. After their removal by the snare the bases were burned with nitric acid, and soon thereafter he became rational, his pain disappeared, and he commenced his daily work as a repairer of street-cars. Later on the hearing became equal to that of the unaffected ear, and now he is perfectly well so far as his ear is concerned. His hearing is, however, somewhat deficient on both sides.

I do not intend to give the impression that in every case of polypoid complication the results are better than in those where polypi do not exist, but I do mean to say that the average amount of benefit derived in the latter class of cases is much greater than in the former. There are mild or exceptional cases of suppurative disease, especially of recent standing, whose course is a quiet and benign one—their tendency being to self healing, but in the chronic cases—and it is usually in these we find our overgrowths—there is no question as to the great difference in results of the polypoid and non-polypoid suppuration cases. For the explanation of this clinical fact, I refer you to the thoughts just given, and to your clinical note-books, which I believe will bear me out.

I desire to note just a few average cases of this disease in addition to the two given above:

*Case 1.*—Mr. Jacob K., of Buffalo, N. Y., was treated by me for polyps of right ear in 1889, and after their removal, they having been cut out of the ear by scythe-shaped polypi knives, especially made for me for this purpose, and burning of the base of each with nitric acid, the watch showed a hearing distance of 18 inches, as compared with *nil* before the operation.

*Case 2.*—On March 3, 1893, I commenced to treat Miss Mary H., aged 24 years. For twenty-two years she had had suppuration in both ears, caused by scarlet fever. She heard conversation with difficulty. She heard the watch in the right ear at three and one-half inches, and in the left ear not even on contact. Within the perforations, large masses of granulation tissues were discovered and removed; after this the suppuration ceased and the perforations healed. The watch hearing improved in the right ear to 18 inches, and in the left ear to 5 inches. Conversation is now heard without effort, and she thinks the hearing is perfect. Of course, she has never been able to hear perfectly, and, therefore, she has no accurate means of comparison.

*Case 3.*—In 1893 I treated Mr. John H., of Wayne, Pa., a case of entire destruction of the drumhead with complete obliteration of the mastoid cells, the mastoid having opened early in life, the result of scarlet fever; the suppuration was of fifteen years' standing, occupying the entire middle ear cavity; and extending out beyond the auricle, was a very large polyp of dense consistency. Yet, despite the extensive destruction present, after the polyp had been removed be began to hear the watch as far as three inches from the ear, and with effort could hear whispered conversation.

*Case 4.*—In 1888 I treated Mr. George S. of Bristol, Pa., for suppuration of the ear with extensive granulation masses. With great care I was able to preserve intact the entire chain of bones, all the drumhead, however, having been destroyed. By persisting with the treatment, I succeeded in removing all the granulations and curing the suppuration. After this his hearing improved to normal; in fact, the hearing in this ear was better than in his sound one, although originally he could not hear any sound on the affected side except by bone conduction.

*Case 5.*—In 1897 I treated the ear of Mr. Edg. H. B. of Johnstown, Pa. His ear had been affected for over a year, and there was no vestige of a drumhead. Down at the bottom of the meatus, after the removal of a large polyp which filled the entire meatus, protruding far beyond its outer edge, I found a dense mass of granulations attached apparently not only at the usual seats of the upper and inner side of the tympanum, but to every part of the tympanic cavity. I had no hope, when I commenced work on the ear, of restoring to him even a part of his hearing function, but, nevertheless, I removed as much of the mass as possible by the snare, and after this burned the base with the electrocautery as well as by nitric acid, and continued to remove by these latter measures every diseased spot discoverable within the middle ear, endeavoring as much as possible to avoid the location of the oval and round windows. By persistent work, I succeeded in three weeks' time in completely removing these growths, and stopping the suppuration, and to my surprise, restored the hearing from no contact hearing for the watch, to seven inches. I heard from him some three months after he went home, and he tells me his hearing has continued to improve.

I hope that the recording of these remarks, with the outlines of these few cases, will serve to call especial attention to a class of ear cases which are rather apt

to prove the bane of the general physician, and are prone to be so discouraging as to incline him to think they are incurable, whereas, the truth of the matter is, that in suppurative cases with and without granulations and polypi, all other things being equal, the polypoid cases are the more readily cured, and are likely to be followed by better results as to the restoration of hearing.

DISCUSSION.

Dr. J. HOMER COULTER—I do not wish to criticise the paper in any particular. It was a most excellent résumé of the subject, and in particular I would compliment the generalization and arrangement of the etiologic factors. At the same time I must dissent somewhat from his use of acid escharotics, particularly in cases where there is hemorrhage. I do not believe we ought to use anything but the cautery in such cases. By its use much, if not all, of the hemorrhage might be avoided.

Dr. J. A. STUCKY—I am surprised that the essayist did not refer to necrosis or caries in cases reported. My own experience has been that where there are granulations or polyps, there is necrosis or caries, and these conditions must be scientifically dealt with.

Dr. J. F. BARNHILL, Indianapolis—The discussion has led into two very natural channels, the one in which operative procedures are attempted early, and those in which less radical measures are used. It seems to me that the presence of polypi or granulation, can not always be regarded as more favorable conditions than when an inflammatory condition exists without them, for we well know that in many of these cases there is also present bone necrosis; indeed the presence of the granulation often depends upon such necrosis, and can never be cured, or the condition regarded as in any way favorable, unless we are able to entirely remove the necrotic condition. Since the diagnosis of necrotic bone can not always be readily made out, I always feel it best to keep such patients under observation for a time, snaring away and cauterizing the exuberant tissue in the meantime, and thus getting a better view and field of operation, while at the same time thorough cleanliness is maintained. Such simple treatment is all that is often required, the case going rapidly to cure, and thus proving that the origin of the granulations is not from necrosis. Should such treatment not cure the patient, I always strongly suspect dead bone and am usually able to find it. This means that it should be cleared out by one of the delicate surgical procedures, under ether.

Dr. RANDALL said that he would like to speak in favor of unterrifying measures. Patients will dread operations, however improper that they should not fully confide in the surgeon. It frequently is possible in probing to locate the seat and study the pedicle; not only to do this, but to rotate the growth so as to strangulate by torsion and to twist it off as neatly as a negro cook removes the head of a chicken. Opposition to operation may be thus forestalled. As to the bleeding which has been spoken of, narrow strips of gauze in this and many other surgical measures, far excel any other measure for controlling hemorrhage. These are matters almost too simple to deserve mention, yet they seem inadequately known.

## DRUMHEAD PERFORATIONS.

### THEIR SITE AND SIGNIFICANCE.

Presented to the Section on Laryngology and Otology, at the Forty-ninth Annual Meeting of the American Medical Association, held at Denver, Colo., June 7–10, 1898.

BY BARTON H. POTTS, M.D., AND B. ALEX. RANDALL, M.A., M.D.

PHILADELPHIA, PA.

Much has been already written as to the portion of the tympanic membrane most frequently perforated by suppurative disease; but it has accorded poorly with our experience, and it has seemed worth while to study a larger series of cases, since even those studies which claimed a basis upon statistics were founded upon quite limited numbers. Thus Moos[1] cites 126 perforations, of which less than 90 are strictly available for our purpose, and of these 35 were in the lower anterior quadrant. The preponderance of these perforations in the light-triangle region has been affirmed by most writers; while some have laid stress upon these or some other form as having special obstinacy and importance.

In view of the pathologic and therapeutic points involved in this matter, it has seemed desirable to secure all available information. A study has therefore been made from private and clinic record-books, using every case in which the exact location was drawn or explicitly stated; and it has been rather humiliating to note how many thousand records had to be gone over to find the 1000 cases used. It has seemed best to exclude all the cicatrices and dry perforations such as are at times hardly distinguishable from depressed atrophic areas of the non-perforated membrane—one type of which has been taken up by Dr. Jas. M. Brown in his "Statistical Study of the Foramen of Rivinus and Scars of the Flaccid Membrane," prepared for presentation at this meeting. Those cases of large disappearance of the drumhead in which cicatricial contraction plays perhaps a larger part than does the destructive process have been also excluded, to the reduction, doubtless, of the percentage of central openings.

The findings are in fair accord with our expectations, although conflicting with those of Moos and other writers, in that the largest proportion of perforations was found in the lower posterior quadrant. While this fairly agrees with the clinical observation that the greatest bulging is generally of the posterior—oftenest of the upper posterior—portion in the early stages, that might have proved more apparent than real and been offset by the statistics of actual openings, the private records, with their larger proportion of acute cases, have as large a percentage in the upper posterior quadrant (38 per cent.), which are 16.4 per cent. of the whole number. This rather weakens the extravagant claims that are sometimes made as to these high-placed perforations. So, too, as to the Shrapnell region above the short process, the presence here of a discharging opening in the flaccid membrane in 10 per cent. of cases fully accords with what has been urged as to the dry, pin-hole, "foramen of Rivinus" at this point, which has been found in 25 per cent. of adults, although never seen in early life.[2] Bad as are the bad cases of attic and antrum disease with perforations at these points, there is no sense in including under their ill-repute the many cases which are of no exceptional severity and in no need of radical treatment by operation.

The anterior-inferior perforation, commonly stated to be the most usual, appears in but 25 per cent. of cases; although to these might be added many of those designated as central, as well as some of those anterior or inferior. Yet all of these combined constitute but 33 per cent., as against 39 per cent. in the lower posterior quadrant. Posterior perforations sum up 49 per cent., as compared with 34 per cent. that can be counted as anterior. Recalling not a few cases of perforation or scar just below the short process in the upper anterior quadrant, it is a little surprising to note but 1 per cent. of these among our cases; which may mean that many such apparent scars are only atrophic, non-perforative lesions.

Turning now to the significance of the various seats of perforation, we have perhaps but negative statements to make. Those who hold all attic suppurations with perforation in the Shrapnell membrane to be serious obstinate cases, generally requiring exci-

[1] Klinik der Ohrenkrankheiten, 1866, p. 126.

[2] Randall: Trans. Am. Otolog. Soc., p. 89, 1894.

sion of the ossicles, will find that our list proves too much to support that view; as will those who make like claim as to the openings up and back. The truth is not far to seek, however. Such generalizations are a little too sweeping; and one must suspect that tardy recognition and lack of diligent treatment of these high-placed perforations accounts for more of the obstinacy of some of the cases than any inherent intractability or defiance of gravitation. It gets very tiresome to meet such constant assumption that man never varies from his upright attitude and that a high perforation can not drain this or that cavity. Capillarity and internal pressure, not to speak of irrigation, etc., count for more than gravitation in giving drainage; although this can have its advantage in collecting the discharge along the upper wall of the canal when the patient is recumbent and—unless it be mistaken for cerumen—calling attention to the opening which it often conceals. When one sees such cases by the hundred, and secures more satisfactory results without operation than reliable men gain from their excisions, it is easy to feel that much room yet remains for conservative but thoroughgoing treatment.

And when due care is given to the nasopharynx and its lesions, which underlie and maintain some of the other conditions alleged to be inherently inveterate, we will hear less of attempts to define treatment upon any mere basis of the location of the drumhead perforation. While the marginal openings up or back often signify caries of the ossicles or of the adjacent tympanic margin, these are yet not such very intractable conditions; and they only become the persistent, grave matters they are claimed to be when the real focus is in the antrum or the mastoid cells out of reach. The same may be said of the lower posterior perforations which are occasionally associated with caries of the adjacent hypotympanic recess, which has been termed the tympanic "cellar." Curetting or more rigorous operative measures may be required by such a condition; but only in a group that has been small in our experience. Of the group with heart-shaped perforation down and forward, which has been claimed to be especially obstinate until traction has been relieved by section of the tensor tympani, we can not speak from experience, as no such cases have forced themselves upon our notice, and we plead guilty to considerable skepticism.

In closing, it may be said that a single thousand perforated drumhead cases can furnish no great basis for any positive conclusions; and it must be admitted that the component hundreds show sometimes very varying results. Yet, as a step toward clarifying the matter, the study may have value, at least in inducing others to similarly summarize their experience.

DISCUSSION.

Dr. S. G. Dabney of Louisville—I have listened with much interest to the paper of Dr. Randall. I was surprised to hear that statistics show 38 per cent. of perforations to occur in the upper posterior segment of the drum membrane. In my experience I do not think the proportion in this locality has been so great. I would fully endorse the remarks of Dr. Randall as to the significance and curability of acute perforations in Shrapnell's membrane. Many such cases have yielded to simple measures, when treated in the acute stage. I wish the essayist had dwelt a little more emphatically on the importance of perforations near the upper and posterior edge in the neighborhood of the entrance to the mastoid, and also on those small, hardly-visible perforations at the very margin of the drum membrane. The former situation is often indicative of a serious complication, and those in the latter are often very difficult to cure.

Dr. J. A. Stucky—This is an extremely interesting subject. The larger percentage of cases I have seen have been in the upper posterior quadrant. I am not able to give a reason for this. Perforations in Shrapnell's membrane more frequently than any other, call for intratympanic operations.

Dr. W. W. Arnold—In line of Dr. Stucky's inquiry, why such a large proportion should occur in this region, I think it might be explained on the ground that the drum presented the least resistance at that point. I recollect a case of a man who fell from a considerable height and burst the drumhead at this point, from which a severe hemorrhage occurred.

Dr. Randall (closing the discussion)—I fully concur as to the seriousness of some of the upper posterior perforations, as of some of those in the Shrapnell region, especially the slit-like, hardly-visible openings close to the margin, generally with a bare bone margin and pouting granulations. Caries is so often here present, and often cholesteatoma formations in the antrum, and some of these cases need thorough operative intervention. On numerous occasions I have urged that only a small number of attic suppurations demanded operative measures and I find more than a confirmation of this in the findings here presented.

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## ADENOID VEGETATIONS.

### HOW AND WHEN SHALL WE OPERATE FOR THEM?

Presented to the Section on Laryngology and Otology, at the Forty-ninth Annual Meeting of the American Medical Association held at Denver, Colo., June 7–10, 1898.

BY EMIL MAYER, M.D.

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NEW YORK CITY.

The presence of adenoid vegetations, or more properly speaking, lymphoid hypertrophies, having been ascertained, the question arises, how shall we operate? Shall we use an anesthetic or not, and with what instruments shall we proceed? In very young infants it is idle to attempt a radical operation. In the first place, the vitality of the patient would be seriously endangered if an anesthetic were used, and in the second place the entrance into the posterior nares is so small in infants that the usual instruments could not be introduced without seriously lacerating the soft parts. It is my custom to use a Gottstein curette or a similar one on these young infants, always announcing, however, that the operation is for temporary relief only, and that the more radical operation may be necessary later, as recurrence is the rule. I have thus operated successfully on very young children, the youngest being eighteen days old.

In certain instances, where the children are entirely submissive, the operation may be performed without an anesthetic. As a rule, however, complete anesthesia is requisite, and operators differ as to the choice of an anesthetic. Chloroform has its firm advocates; but when we note its dangers we will do well to consider thoroughly before deciding upon its use. In a very admirable paper presented before the American Laryngological Association at its twentieth annual Congress, Dr. F. W. Hinkel of Buffalo reports a case of death from chloroform while operating for lymphoid hypertrophies. He mentions six other deaths reported as occurring under the same conditions, seven in all. Is it not proper then, in view of these facts, to consider this question very seriously before deciding upon its use? Knowing full well the discomforts and even danger that these lymphoid hypertrophies cause to the patient, yet they are not so serious as to permit us to place the patient's life in danger. It is better, indeed, to take every chance of mouth-breathing, possible otitis and even debilitated constitution, than run the risk of cutting short a human life that might have

been spared. I wish to indorse as fully as I can the statement of Hinkel, quoted from an article on anesthesia, by Brickner, that chloroform is absolutely dangerous to those having the lymphoid tendency. In the light of our present knowledge, chloroform must be placed as being far too dangerous for use.

Bromid of ethyl acts promptly, but the presence of free bromin makes it dangerous.

Nitrous oxid is much too evanescent. Sulphuric ether, when given alone, is free from danger to life, but there are some objections to its use. The stage of excitement is prolonged, there is much accumulation of bronchial secretions, bronchopneumonia may result, and the subsequent somnolency may be an element of danger, in that hemorrhage may occur while the patient is unconscious and blood trickle down into the pharynx without our knowledge until, some hours thereafter, the attendant reports the patient alarmingly pale and faint. Nitrous oxid and ether make a very valuable combination, the former being used to induce primary anesthesia and the ether promptly follows. The stage of excitement is absent and the amount of ether required is so small that its disagreeable after-effects are minimized. Above all it is absolutely safe.

I have had satisfactory results from the use of the Schleich mixtures for general anesthesia. In a recent paper read before the American Laryngological Association I reported seventy cases in which I had used these mixtures successfully for operations upon the nose and throat. The No. 1 mixture is all-sufficient for our purposes, and is composed of

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| Chloroform | 45 c.c. |
| Petrolic Ether | 15 c.c. |
| Sulphuric Ether | 180 c.c. |

These parts are by volume, not by weight. It is important that the petrolic ether or benzin, shall have a boiling point of from 60 to 65 C.

It is best administered by the rapid drop method, as suggested by Willy Meyer, upon an ordinary chloroform mask covered with gauze, flannel and oiled muslin with a hole cut in the center. The amount required to produce complete anesthesia is about four drams, and from four to six minutes is all that is usually required to induce thorough narcosis. After a whiff or two the most unruly child becomes quiet, the breathing is natural and the patient seems to be asleep. No shrieking nor contortions are present, the attendants, whose aid was formerly so valuable in the stage of excitement, have nothing to do, the tension of the pulse is increased, and by the absence of conjunctival reflex we are first aware that the patient is fully narcotized. After the operation is completed it requires from four to six minutes before consciousness is fully restored. This latter fact seems to me to be of the utmost value, as we can promptly detect the presence of undue hemorrhage, by the expectoration.

Anesthesia being decided upon and the anesthetic selected, the time for operation is the next question to decide. Wherever possible the early morning hour should be selected as the most humane. Children want their meals, and it becomes often a severe tax upon the weary and excited mother to stay its pleading for food or drink. The bowels are moved the day previous, and the child goes to bed at its regular hour, having had its meal as usual. It is often asleep when the operator comes, and after a few whiffs of the anesthetic while in its own bed, it is frequently unaware of any operation having been performed. As to place, while operations may, and often are, done in the patients' homes, we naturally give preference to the properly equipped operating rooms of our hospitals. For reasons that will be mentioned, it seems to me to be inadvisable to perform these operations in our offices when an anesthetic is given.

Wherever these operations are performed, they should never be undertaken without ample assistance, and it is my invariable rule to have a trained nurse and a competent anesthetist present. The nurse prepares the table near a window, she has a bowl of cracked ice about the spray bottle of Dobell's solution, the sterilized instruments are placed in a 2 per cent. solution of carbolic acid, a bowl containing sterilized water is at hand, and bichlorid solution for the hands is ready for use. The instruments devised for this operation are so many that their mere enumeration would take up too much of your valuable time. Each instrument has some merit, and there is none suitable to every case. Hence, it is well to have various-shaped instruments at hand. The forceps I use are the Hooper, Gradle, Quinlan and Lowenberg, the curettes Gottstein and Hartmann. The head being dependent over the edge of the table and supported by the assistant, the jaws are held open with a mouth-gag, the forceps are introduced and all tissue within its grasp removed. A smaller forceps follows this one, then the curette is used, followed by the forceps, to detach any tissue loosened by the curette, and the finger now sweeps all over the postnasal space to note if all is removed. The patient is turned over on his face and the blood allowed to flow out, the nose and throat are well sprayed with the iced antiseptic solution and the operation is finished. The patient is now placed in bed, the directions are given for a low diet, and a spray of the iced antiseptic solution in the nose and throat used once every hour. Every case operated upon, either in my private practice or in my clinic at the New York Eye and Ear Infirmary, is kept in bed and under observation for twenty-four hours. This rule is not usually followed in clinics. I have invariably done so for the past three or four years, and I am glad to note that it is being generally adopted. Because I consider rest in bed so essential immediately after operations, I do not operate in my office. After the first twenty-four hours the spray is used less frequently and no longer iced. After the third day warm saline washes with some antiseptic added may be used by means of a nose cup.

This method of operation has been followed by the very best results in my hands. There have never been any disagreeable consequences, no sepsis, no hemorrhage nor any annoyances whatever. It would seem needless to add, but experience teaches the advisability of its mention, and I am sure that you will fully indorse the statement, that no operation for adenoids should ever be undertaken while the patient has any acute inflammatory disease of the throat, or during the existence of any of the exanthemata.

25 East 77th Street.

DISCUSSION.

Dr. J. F. BARNHILL—No doubt the part of this paper which interests us most is that relating to the anesthetic. We use practically the same instruments in operating, and our aim is to thoroughly clear the nasopharynx of the adenoids. But as to the kind of anesthetic, or whether an anesthetic shall be given, there is more difference of opinion. One of the seven deaths from chloroform in the removal of these growths referred to in the essay was probably mine, for unfortunately, such a calamity befell me and was reported. The child was 6

years old and healthy in every way, except that it had enlarged tonsils and adenoids. I examined the chest and lungs on the day previous, cleared the bowels with a physic and prepared the child well for the operation, which was done at 8 A.M., a glass of milk having been taken at 6 A.M. The chloroform was given by an experienced physician, the child taking it well and being rapidly narcotized. The operation was done by first removing the faucial tonsils, then the adenoids, the time being less than two minutes. The head was well down over the table and there was the usual amount of hemorrhage. The child recovered sufficiently to cry and blow clots from the nose. I then proceeded to examine the masses removed, when the anesthetist called me, saying the patient was doing badly. A glance showed the assertion true, and means of resuscitation were promptly begun and continued for more than an hour. There was no heart-beat from the instant we noticed anything wrong, the death being apparently due to sudden paralysis of the heart. No postmortem was allowed. Since that time I have used chloroform but very little, for, judging by this case, there was positively no contraindication to its use. I now use nitrous oxid in almost every case in children, and find that the anesthesia lasts quite long enough to complete the work satisfactorily. I keep my own apparatus and use the S. S. White gas and retainers. In adults I operate with cocain anesthesia. First cleanse the parts, then with a properly curved cotton-tipped probe, dipped in a 4 per cent. cocain solution, and then depositing a few crystals of cocain upon the tip and posterior surface of the cotton, with the palate well retracted and the mirror in place, I deposit the crystals directly upon the growth *and nowhere else*. Not more than a half-gram should be used, and then the growth should be removed within a minute. I have often performed this operation thus, with little pain and no symptoms of cocain poisoning. I have always believed that a considerable part of the pain of these operations is due to fright, and another and more considerable part to the spasmodic contraction of the palati and constrictor muscles about the instruments, thus permitting the injury of the parts.

Dr. J. HOMER COULTER—I doubt very much if there is much tendency in these adenoids to return if once they are thoroughly removed. I am blamed somewhat for cruelty since it is known that I do this operation ordinarily without any anesthesia whatever. I can not believe that the very considerable danger in the use of chloroform and ether is counterbalanced by the slight pain which occurs from the operation carefully done. I would prefer that some one else assume the responsibility of giving the anesthetic.

Dr. S. G. DABNEY—One of the chief points brought out by Dr. Mayer's paper is the difference of opinion as to anesthesia. Like the essayist, I very often use general anesthesia. I often have chloroform administered. It would be interesting to know whether the deaths from chloroform reported by Dr. Hinkel were dependent in any way upon the character or situation of the operation, or whether they were just such as are always liable to occur from chloroform or ether. We must all appreciate the fact that there is always danger in the use of an anesthetic for whatever purpose it is used. I can not think that the finger alone is often sufficient to remove these growths. I think we all agree that Dr. Mayer is wise in keeping these children in bed for twenty-four hours, and in selecting the early morning as the time for operation. Like Dr. Mayer, I use first the forceps and then the curette, and if the patient is anesthetized I put my finger in the nasopharynx to see that the removal of the adenoid is complete.

Dr. MAYER (closing the discussion)—This subject causes so much discussion that it brings out the ideas of each participator and a great variety of opinion. I do not indorse the use of cocain, either in spray or plugs, in the nose. In my hands they have been valueless. Chloroform is really dangerous, and I wish to retract the statements that I formerly taught that it is not so. The report of the case of Dr. Hinkel, a careful observer, and that of Dr. Barnhill, whom I know to be conservative, are enough to make us pause and feel that we must always protect our patients. The statement of Dr. Lautenbach that he always operates with his finger only is one which I wish most emphatically to protest against and condemn. It would be a source of infinite regret to me to feel that the endorsement of such an unsurgical procedure would have the sanction of this Section. It is a crude, unsatisfactory and most inhuman method, and more harm than good can ever come from such methods of operating in the long run. Dr. Ingals has suggested the forceps in the nose to remove any pieces of tissue that are not grasped by the forceps and curette. I agree with him entirely, and consider it proper routine practice.

# ADENOID GROWTHS.

## THEIR RELATION TO DEAF-MUTISM—REPORTS OF CASES.

Presented to the Section on Laryngology and Otology, at the Forty-ninth Annual Meeting of the American Medical Association, held at Denver, Colo., June 7-10, 1898.

BY A. C. GETCHELL, M.D.

WORCESTER, MASS.

Within the last year I have operated on three deaf-mute children for the removal of adenoid growths and enlarged tonsils. I propose to report these cases, and to examine the questions: To what extent are adenoid growths and enlarged tonsils a cause of deaf-mutism? and What may be accomplished by their removal? Two of my cases were boys, aged 8 and 9 years, and the third was a girl aged 3½ years.

*Case 1.*—P. H., aged 9 years. Both his maternal and paternal grandparents were cousins. There was a history of tuberculosis on the mother's side, but both father and mother were healthy. Besides his brother there had been but one other child in the family, who died at the age of twenty months, of stomach trouble. As a baby, this boy was small, weighing only 4½ pounds at birth, and he was brought through infancy with difficulty. His head is now small, but he is not specially undersized. He was not deaf at birth. As a young baby he seemed very sensitive to sound. He was a light sleeper, and a whisper or soft whistle would waken him. His parents do not know when he lost his hearing. His speech was so poor that they thought school instruction would help him. He could get inflections, but not articulations. His teachers discovered the real difficulty. He has had measles, but not scarlet fever nor convulsions. His parents gave catarrh as the cause of his deafness. With his brother he was taken to the Horace Mann School, and it was there advised that they both be kept among hearing people. They were also taken to the Massachusetts General Hospital and were under the care of an aurist. They have been under the instruction of Miss Littlefield, a teacher of the deaf and dumb, now a year and a half.

Examination showed large tonsils and adenoid growth. In the right ear the membrane was thickened, the light spot but no other landmark being visible. In the left, the membrane was reddened, and no landmarks were visible. June 28, 1897, I removed the adenoid growth and the tonsils, under ether.

In April, 1898, Miss Littlefield gives this report of his condition: "Philip's hearing has improved in so marked a degree as to be noticed by his playmates. Naturally, the better hearing helps to obtain better articulation. A neighboring store forms a convenient place to test the value of his speech. He has often done errands for his mother by carrying a piece of paper on which was written the name of the desired article. During the past winter he has objected to that method, preferring to talk, and when told the name would practice until he could speak it correctly, and then would run to the store and ask for the article. He has never been misunderstood, for he has always done his errand correctly. He has been free from colds, to which he had been subject, and his general health has improved."

*Case 2.*—W. H., aged 8 years. This patient was a brother of Case 1. He was not born deaf; until the age of 2 years his father thinks he heard. He said a few words: "Mamma take," "papa take," "Ida take," also "ear" and "pie," of which he was very fond! At 2 years of age he had cholera infantum and convulsions, and has not heard or talked since. He can hear only sharp sounds like a bell. There were large tonsils and an adenoid growth. In the ears both membranes were indrawn and thickened.

June 28, 1897, the tonsils and adenoid were removed under ether. Except for improvement in general health, breathing, and freedom from colds, there has been no result from this operation.

It may be interesting to add that the boys are bright and affectionate.

*Case 3.*—P. L., a girl aged 3½ years. She is an unusually bright and active child, one of a family of seven children, all of whom are healthy. The father and mother are also healthy,

and the family history is good. She was not born deaf, nor has she had any infectious or contagious disease. She has, however, had six convulsions, five during teething. It is from a convulsion at a year and eight months of age that her father dates her deafness. She has said a few words and can hear sharp sounds. She had an adenoid growth, enlarged tonsils and both membrana tympani were indrawn and thickened. The adenoid and tonsils were removed June 26, 1897. There has been no improvement.

James Kerr Love found that 70 per cent. of the deaf-mute children in Glasgow had adenoid growths or enlarged tonsils, or both. These figures agree with those of other observers. This proportion is certainly larger than in hearing children, but are these growths an important causative factor of deaf-mutism? Adenoid growths and tonsils alone are prone to cause disease of the middle ear with perforation of the membrane and a running ear. But great deafness does not usually accompany such a condition. There are those who think that mutism as well as deafness follows and is caused by adenoid growths and nasopharyngeal catarrh, but the weight of authority is against this view. Undoubtedly, the presence of adenoid growths and enlarged tonsils, when there exists also serious damage to the internal or middle ear, will make the acquirement of spoken language much more difficult, and it may be impossible. But of themselves they are not an adequate cause, appearing as they usually do, as late as the third or fourth year, when the condition of deaf-mutism already exists. To be sure, there have been cases where no other cause than nasopharyngeal catarrh could be assigned. But when we consider how rare is nasopharyngeal catarrh in a very young child and that the trouble is not detected, as in the two boys whose histories I have reported, until the condition of deaf-mutism has been fully established, and, furthermore, when we consider the undue importance the laity attach to the term "catarrh," and how apt it is to be regarded as the cause of many troubles, it is plain that evidence on this point is not very reliable. On the other hand, clinical investigations and pathologic findings show that deaf-mutism is either congenital or that it has followed cerebral disease, such as meningitis, epidemic or isolated, or such a disease as scarlet fever.

Holger Mygind has collected the reports of 139 postmortem examinations of deaf mutes, the series including both congenital and acquired disease and those cases in which no cause was assigned. The pathologic lesions in the different groups did not materially differ. I have selected from his reports notes describing conditions which were frequent and which serve to indicate the characteristic pathologic lesions of deaf-mutism. Thus, the following conditions were found, and many of them often: Membrana tympani wanting, ossicles wanting, entrance to the Eustachian tube wanting, malleus and incus atrophied, incus ankylosed to the inner wall of the tympanum, stapes ankylosed and the fenestra rotunda absent, the tympanum filled with a caseous mass, the osseous portion of the Eustachian tube to a great part filled with an osseous mass, while the cartilaginous portion was substituted by an imperforated cartilaginous mass; fenestra ovalis and rotunda closed by an osseous mass, the whole labyrinth filled with caseous matter, labyrinth absent, semicircular canals, one or more wanting or replaced by osseous tissue, or closed by an osseous mass, or walls thick and like ivory; semicircular canals replaced by two tubes which communicate with each other; all the semicircular canals ending in a cul-de-sac shortly after their origin, cochlea absent, its entrance from the vestibule and fenestra rotunda leading to two small cavities; cochlea very short, forming only $1\frac{3}{4}$ turns; modiolus and laminus spiralis only present in the first half turn of the cochlea, in the lap of which a large cavity was produced. There was also reported atrophy of the nervous elements of the auditory nerve, and these conditions existed: auditory nerve only one-third its natural size and of fibrous structure, no part having the appearance of a nerve; only traces of the nerve found, atrophy of the cerebellum; cortical layer of the cerebrum atrophic in several places.

These pathologic data bear out the statement of Love (p. 159). "We know that the essential part of the hearing organ is the internal ear, and without any detailed examination of the morbid processes which accompany deaf-mutism, we may safely predict that the deafness is almost always due to abnormality of the labyrinth. This is true as a general statement."

With the almost absolute certainty that the pathologic lesion in every deaf-mute is in the internal ear, whether the middle ear be involved or not, and with the certainty also that no therapeutic measures will influence these processes, it is evident that the chances are vastly against any material help to hearing coming from the removal of adenoid growths or enlarged tonsils. On the other hand, it is to be borne in mind that in hopeless cases even a small gain is a great deal, and where there is a vestige of hearing remaining there is reason to suppose that some part of the auditory apparatus has escaped and, as is shown by my first case, something may be accomplished to mitigate the condition of these unfortunate persons.

Another question is to be considered: Do these growths have any effect upon the acquirement of spoken language?

The dead voice of the adenoid child and his inability to properly articulate are among the chief characteristics of the disease, and it is now generally recognized that these growths are a serious hindrance to the proper development of voice and speech. If this is so in the hearing child, how much more important do they become in the deaf, where speech has to be acquired through slow and tedious muscular exercise, the initiative faculty being aided by the eye and checked and corrected only by the sense of feeling and not by any appreciation of the result of a proper adaptation of the vocal organs that hearing affords. Since speech is acquired by the totally deaf only by the constant repetition of muscular adjustments anything that interferes with such adjustments makes the task so much the more difficult. These growths do seriously interfere with the free action of the vocal organs and, therefore, on this account should be removed. Again, the general well-being of the child is so much promoted by their removal. This is as true of the deaf as of the hearing, and they should have the benefit of the operation.

We, therefore, arrive at these conclusions: Adenoid growths and enlarged tonsils should be removed from deaf-mutes:

1. If there is any probability that they contribute to the deafness.

2. If they make more difficult the acquirement of spoken language in the oral pupil.

3. To improve the general health of the child.

On the first two points the prognosis should be exceedingly guarded.

DISCUSSION.

Dr. RANDALL opened the discussion with the remark that the views of Dr. Getchell were in full accord with what he had seen. Many of the pupils of the Pennsylvania Deaf and Dumb institution in Philadelphia came under his care as consulting aurist, but Dr. A. A. Bliss, the attending laryngologist and aurist, had examined most painstakingly all of the pupiis. He found many affected with adenoid overgrowths, but it is questionable if it is more frequent than in other children. A number were relieved of their adenoids to their great advantage, but so far as he knew without any gain in hearing. Much may be done to improve the speech, and incident to teaching this, much exercise will be given to the auditory apparatus and centers beyond, and the renewal of hearing, which is commonly present, may be made the most of, if not improved.

## ADENOID VEGETATIONS IN THE NASO-PHARYNX.

Presented to the Section on Laryngology and Otology, at the Forty-ninth Annual Meeting of the American Medical Association, held at Denver, Colo., June 7-10, 1898.

BY JOHN O. McREYNOLDS, B.Sc., M.D.
DALLAS, TEX.

In this brief paper on adenoid vegetations in the nasopharynx I shall confine myself to a consideration of the measures which I have employed at different times, and especially those that I have found most satisfactory in the management of this condition. Its pathology and its importance are both so generally conceded that nothing appears to be required in order to establish these facts which are set forth in all works on laryngology. But as the method of dealing with this trouble has varied widely in the hands of different authorities, it might be well to briefly review these different procedures in the light of our individual experience. The treatment may be either medical or surgical, or the two may be very happily combined. In my judgment the surgical procedures are by far the most efficient, and they consist in the radical removal of the growths.

The question of anesthesia is the first to be considered, and in actual practice it is of the greatest importance. Formerly I always employed a general or a local anesthetic and I have never had any unfortunate results from its use, but during the last few years I have completely abandoned both of these for the following reasons: the local anesthetic does not penetrate deep enough to do any material good, while the effect is sometimes depressing and very frequently unpleasant. The general anesthetic always involves some risk, and especially is this true in operations where blood-clot is liable to form across the rima glottidis, while the sensibility of the larynx is obtunded and the reflex act of coughing is not induced by the presence of a foreign body in the larynx. And then the time and labor and extensive preparation involved in the operation with a general anesthetic will cause an unnecessary amount of anxiety on the part of the friends and relatives of the patient, while the patient will experience as much suffering from the administration of the anesthetic and the subsequent nausea and vomiting as would be incurred by the operation itself. So the entire operation, as I perform it, seldom consumes more than thirty seconds of time, is perfectly free from danger, is quite satisfactory in results, and involves the minimum degree of bodily distress to the patient and of mental solicitude on the part of all concerned. For the removal of these growths I have repeatedly used various instruments, including different forms of curettes and forceps designed for this purpose, and I still employ them in those exceptional cases in which the amount of fibrous tissue is unusually large. But in the vast majority of cases I find that a first-class mouth-gag and the index finger of my right hand will supply all the armamentarium required. I do not even resort to the long, sharp-pointed finger-nail, but I keep all my finger-nails trimmed close and use a method of expression for the removal of the growths. By this procedure the entire nasopharyngeal cavity can be thoroughly explored and effectually cleared of all obstructive lymphoid tissue, and that without any possible injury to the soft, delicate structures of a child's throat. Indeed, I regard a thin layer of lymphoid tissue in the nasopharynx of a child as a perfectly normal condition, and any operation which will be liable to scrape away everything, down to the periosteum, will lay the foundation for subsequent atrophic changes more difficult still to control. Thus, the removal of the adenoids with the finger will restore the proper capacity to the nasopharynx, relieving the postnasal and Eustachian obstruction, and leaving a velvet-like lining which is normal in quantity and in quality and will naturally and gradually diminish as the child advances in age. The details of the plan I employ are as follows:

The child sits in the lap of an assistant with its head leaning against the right shoulder of the assistant, who embraces the child with his arms, holding its body and its hands firmly, while its feet are grasped and secured by the knees of the assistant. Then passing my left arm around the head of the child, I hold the mouth-gag in place with my left hand, while my right hand remains free to remove the growths, which, together with the blood, fall into a basin held in the hands of a second assistant. The subsequent treatment varies according to the special indications presented by each case. Some of the most entirely satisfactory cases that I have ever known have required nothing at all at my hands beyond the operation itself, which did not consume more than thirty seconds.

Cases of this character I provide with an alkaline and antiseptic solution for keeping clean the upper respiratory passages, and this is supplemented by an albolin, an antiseptic solution which I find is very conveniently applied to the wounded nasopharynx by means of an ordinary medicine dropper slightly introduced into the anterior nares. But many cases require also the internal administration of alterative tonics and the more or less prolonged local use of sorbefacient remedies. In my experience the good results of the operation have been pronounced in patients of all ages where I have found these growths present, and I have sometimes operated on infants under one year old with the result of promptly arresting middle-ear suppuration that for many weeks had resisted careful treatment applied through the external canal.

In concluding this very imperfect review of the treatment of adenoid vegetations of the nasopharynx I feel justified in saying that the necessary operation can be performed within a very few seconds, without danger or serious discomfort to the patient, and with the certainty of securing beneficial results that will amply reward our labors.

DISCUSSION.

Dr. B. A. RANDALL—The discussion of adenoids at this and each previous meeting shows considerable diversity among us, but there will always be much to be said on each side. If we consider the physiologic structure and variation in this region, we must recognize that total removal of the adenoid tissue is

absolutely impossible, since it extends far up the Eustachian tube mouths, as well as in the Rosenmuller fossa, and numerous nodules may be found upon the upper surface of the palate. Each will have his own choice of instruments and of procedure in general; but while, once for all, operations are quite possible, they risk overdoing, if they go beyond the removal of what is already pathologic. Cases are seen in which the pharynx has been stripped to the aponeurosis.

Dr. FRANK D. BOYD, Fort Worth, Texas—I simply desire to endorse Dr. Parker's idea of the operation for adenoids. I would suggest that the use of some instrument to be introduced through the nares, following the curetting, is of vast importance, as we often find the adenoids extending high up in the nares, which it is nearly impossible to reach with the curette or fingers.

Dr. MAYER—One point in making a diagnosis of adenoids in children has been overlooked, and that is the existence of adenoid tissue on the posterior pharyngeal wall. When present it is always diagnostic of the presence of adenoids. I note that an objection to anesthesia in these cases is that it is too cumbersome and requires more assistants than without anesthetics. Dr. McReynolds uses two assistants and I use no more for anesthesia, hence his objections are not germane. I consider nitrous oxid too evanescent, but if ether is given directly after the patient has become unconscious from the nitrous oxid, we will have anesthesia sufficiently prolonged and absolutely safe. Once more do I wish to protest against the finger-scraping method, and from the discussion of yesterday and my own knowledge, I am glad to see that these views are those of the majority of the profession.

Dr. HARLAN related a case of chronic pseudo-membrane of the conjunctiva which had existed four years, and which developed genuine diphtheria of the conjunctiva and pharynx after the use of jequirity. The case was reported in full in the *Journal of Eye, Ear and Throat Diseases.*

Dr. MCREYNOLDS, closing discussion—Gentlemen of the Section, I wish to thank you for the free discussion which you have accorded my very imperfect paper, and I would say that I should have been surprised indeed if all the members present had coincided with me in every particular; and I wish especially to express my sincere appreciation of the endorsement of our chairman, Dr. Randall of Philadelphia.

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## AFFECTIONS OF THE EXTERNAL EAR.

Presented to the Section on Laryngology and Otology, at the Forty-ninth Annual Meeting of the American Medical Association, held at Denver, Colo., June 7-10, 1898.

BY B. ALEX. RANDALL, M.D.
PHILADELPHIA.

Although affections of the external ear constitute one-fourth of aural practice, they may well be said to be its simplest part and, in view of their rare seriousness, to be little worthy of much consideration. Perhaps it is this very simplicity and openness to rational measures of general surgery that accounts for much of the neglect they have received, but more potent are the unfortunate traditions of centuries of unintelligent empiric measures to which they have been subjected. When ear-drops were the only known way of treating ear disease, such were indefinitely multiplied, and as ultimate relief followed the use of many medicaments, their supposed potency is a hardly challengeable portion of medical belief. As well save your breath as to argue that laudanum and sweet-oil is not the best possible relief for earache, or that oil or glycerin need not be dropped into the ear for the relief of impacted cerumen.

With the pathology of the ear fairly understood, there should be little need of more than mentioning many of the conditions to have the remedial measures suggest themselves with no great amount of choice or complexity; but even some aurists have not sufficiently clarified their comprehension of these matters, so it is natural that the general practitioner remains befogged. I have no wish to enlarge upon the common and simple affections, with which most of you are as familiar as I can claim to be; but I may be pardoned if I lay stress upon a few points that make for simplicity and clearness.

The external affections make up fully 25 per cent. of all our practice, and more than half of this consists of infected cerumen—about 14 per cent. Of the remainder, diffused inflammations of the auricle and canal, which we can group as eczematous, make up about 5 per cent., and furunculosis, generally sequent upon the eczema, 2 per cent.; leaving a host of rarities to aggregate the remaining 4 per cent. Pardon, all those of you who know that a little hot water will remove any wax plug, when I insist upon this simple point. Use a syringe, alongside of which you can illumine and observe your work, with water of 110 degrees F., and two fluid ounces in as many minutes will almost invariably complete the cleansing. If not, it is because the wax is largely epithelial and probably attached to the walls by incomplete desquamation. The same device will remove almost every foreign body, will relieve many of the furuncles, and never harm if it fail to cure the diffuse inflammations. "But you would not use water when there is a seed in the ear to absorb it and swell?" I am sometimes asked. You may be slow enough to "let the grass grow under your feet," but you must be slower, and lack the sense to dehydrate with a little alcohol, if you are to let such seeds grow under your hands. If you must needs use a traction instrument, try a loop of horsehair, gut or fine wire, before you risk injury by hooks

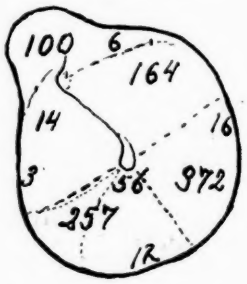


Diagram of drumhead showing sites of 1000 perforations.

or forceps. Don't be too surgical and ingenious, like the man who with mercury floated up a leaden bullet that would have fallen out of its own gravity had the ear been directed downward. No aural surgeon needs to be reminded that foreign bodies in the ear are harmless unless driven in by firearms or a meddlesome extractor. Whether microbes cause the diffused inflammation or only accompany it, we know that they make an unclean condition which needs thorough cleansing, which must be not only of the surface, but must penetrate the tissues as far as they are invaded. Yet few of the books so much as speak of hydrogen dioxid in this connection, although it is one of the few efficient agents at our command. When it has brought to view some subcuticular foci, and our inunction has been used until these grew transparent again, you can feel fairly satisfied with the beginning you have made in curing these sometimes very obstinate affections. Treat it promptly and carefully, and your patients will avoid many a furuncle which would have resulted from scratching. Where the furuncle is a fact, use pressure by a tampon covered with the yellow oxid of mercury ointment, and you will rarely fail to hasten relief and forestall recurrence.

It is out of the remaining 4 per cent. of cases that I have chosen most of my illustrations, believing that these rarities will be of interest. Some of them, like

leprosy, I may never see again affecting the ear—lupus, carcinoma or sarcoma are much less rare. The keloid fibroma is not uncommon in the negro after ear-piercing, and may attain, even exceed, the size of the fist, although I have had no chance to photograph or operate upon one so large. The various malformations are often of much teratologic and some surgical interest, and I am just now watching a group of the cases of small and distorted auricles in which I believe that my early operation will permit a growth slightly approximating the normal. Loss of the external ear by trauma and stenosis of the canal, whether congenital or acquired, is generally well treated in the books, and the cases of exostosis are rarely stumbling-blocks since aural surgery grew less timid. Herpes and erysipelas of the ear need no special consideration except in the differentiation from the severe erysipelatous forms of eczema which may puzle or alarm.

There is one condition or group of affections that seems to have received insufficient recognition and to lack the differential diagnosis which is generally possible and important for treatment. We know, of course, that furuncle is an inflammation of a gland, generally of the sebaceous gland, but we have in the auditory meatus numerous ceruminous glands also, corresponding to the sweat glands of the general integument. These are really subcutaneous in their coiled position and in closest relation with the periosteum, which they sometimes involve, hence the occurrence of marked cellulitis, periostitis and superficial caries. All the symptoms of a mastoid empyema breaking out into the canal may be present, or it may be impossible to distinguish the affection from a burrowing out of pus from the tympanic attic, and surgical exploration may alone afford the clue. The mastoid cavities may be invaded from without, and cholesteatoma formations within those thus opened may seriously complicate the disease as well as its later recognition. The history and our trained intuition may alone differentiate the condition and point out our duty, and there is always room for mistake; but with due consideration of the pathologic possibilities we should not be long in doubt as to the facts or the indications, upon which it is needless to dilate.

DISCUSSION.

Dr. MAYER—There is one form of deformity of the middle ear that is known as hematoma auris of the insane, that is rather frequent, which might be added to the interesting facts here presented. I would like also to call attention to the cases of congenital deformity here presented, and to ask the reader of the paper what his results are from operation as regards the formation of an external canal, and whether it is usual to have a normal tympanum behind it.

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# DEFORMITIES OF THE SEPTUM NARIUM.

## THEIR CLASSIFICATION WITH A VIEW TO TREATMENT.

Presented to the Section on Laryngology and Otology, at the Forty-ninth Annual Meeting of the American Medical Association, held at Denver, Colo., June 7-10, 1898.

BY W. E. CASSELBERRY, M.D.

PROFESSOR OF LARYNGOLOGY AND RHINOLOGY IN NORTHWESTERN UNIVERSITY MEDICAL SCHOOL; LARYNGOLOGIST AND RHINOLOGIST TO ST. LUKE'S HOSPITAL; LARYNGOLOGIST TO WESLEY HOSPITAL, ETC. CHICAGO.

The variety of septal deformities is infinite, no two cases being exactly alike, therefore a classification is best attempted by describing the types most often encountered, with a view to elucidation and systematizing of the treatment.

### I. EXCRESCENCE OR SPUR OF THE SEPTUM.

*Cartilaginous spur.*—This usually projects horizontally from the base of the quadrangular cartilage, although it is sometimes vertical. It may be ledge-shaped, ovoid, or pointed, and may be implanted upon the convexity of a deviation.

*Mixed cartilaginous and bony spur.*—This is a continuation of the former type upward and backward, and it usually embraces first the sutural line of the cartilage and vomer, but gathers volume and thickness as it proceeds along the sutural junction of the vomer and ethmoidal plate, terminating opposite the middle meatus or turbinated body, into which it may press. The opposite side is somewhat concave or it may be the seat of an angular deflection.

*Bony spur.*—This occupies a similar position, but far back, without involving the cartilaginous part of the septum. It may be ledge-shaped or ovoid like a pointed rosette, and may show more distinctly from the rear than in front.

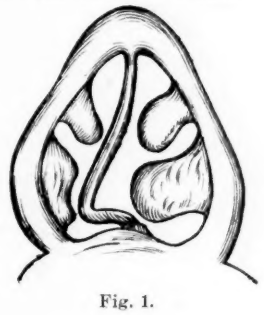

Fig. 1.

Fig. 2.

Fig. 3.

Fig. 4.

Fig. 5.

### II. DEVIATION OF THE SEPTUM.

*Cartilaginous deviation.*—The cartilage may be alone affected, but more often the angle of articulation of the cartilage, ethmoid plate and vomer is involved or forms the center of greatest concavity. If only a small section of the bony part be encroached upon it still may be regarded as cartilaginous from the standpoint of treatment, for the deformity can be corrected by incisions through the cartilage without fracture of the bone.

*Mixed cartilaginous and bony deviation.*—This class embraces cases in which with marked cartilaginous deflection the bony segments are so much affected

and so far back that straightening of the cartilage will not carry the bone with it to the median line.

*Bony deviation.*—This includes the rarer cases in which there is marked deflection far back, affecting the anterior two-thirds of the vomer and adjoining ethmoidal plate with but insignificant deviation of the cartilage. The actual rear edge of the vomer is nearly always straight.

The deflection, whether embracing the cartilage or bone, may be a simple leaning toward one side or the other, connecting at the base by an angular or rounded curve (Figs. 1 and 2), or a simple central bulge (Fig. 3), or an angular formation (Fig. 4), or the lower portion of the cartilaginous septum and vomer may bulge on one side, while, above, the ethmoidal plate and upper part of the vomer is turned to the opposite side producing a sigmoid deflection (Fig. 5), and lastly, any combination or variation of these types may be encountered. Instead of the obliquely horizontal, the acutely angular deflection, especially, may assume a vertical trend; the sigmoid, instead of being vertical, may make a double horizontal curve.

### III. COMBINED EXCRESCENCE AND DEVIATION OF THE SEPTUM.

While excrescence exists without deviation and deviation without excrescence; a combination of the two is the most frequent deformity encountered. The formation of a ledge-like spur along the lower border of the convexity of a deviation, as if provided by nature to support and prevent further bending, is the usual condition, although contortions present themselves in any combination of the types already described.

The etiology of deformities of the septum has proved to be most fascinating, but for the sake of brevity it can form no part of this contribution. For the same reason the interesting chain of symptoms is omitted.

Fig. 6.

Fig. 7.

*Treatment.*—Previous to operating, a correct estimate of the class of deformity present, as regards the thickness of an excrescence, its location, the degree of deviation and the extent of involvement of the bone, should be made by a thorough examination with a probe, for on it, by the adoption of a suitable operation, the prognosis will depend. If the deformity be slight, not sufficient to cause obstruction or other symptoms, interference is unnecessary, but when pronounced, the effects are so deleterious that one should not hesitate to advise correction, for the results are highly satisfactory. The operation must vary in accordance with the class of deformity. When not otherwise specified in the description it is done under local cocain anesthesia, 10 per cent., on cotton pledgets squeezed dry and packed upon both sides of the septum for fifteen minutes.

### IV. EXCRESCENCE OR SPUR OF THE SEPTUM.

*Strictly cartilaginous spurs.*—These necessarily lie well in front and are accessible for Ingals' operation as slightly modified by the author. The ala is best retracted by an assistant with the author's retractor. (Fig. 6.)

An incision is made through the mucoperichondrium over the most prominent part of the spur, and the mucoperichondrium, held by small serrated forceps, dissected freely away from the cartilage in both directions, by the author's double-edged sharp spud (Fig. 7); the excess of cartilage is abscised, and the mucoperichondrium then stitched together. If not all the mucous membrane, then as much as possible of it, should be saved, for it facilitates healing and prevents that interminable incrustation, which is certain to ensue if much mucous membrane in the very front of the nostril be sacrificed.

These strictly cartilaginous spurs are also amenable to treatment by electrolysis. With few exceptions I have employed the preferable bipolar method, by which two needles, one representing each pole, are inserted into the spur. My needles are made of iridoplatinum, which is nearly as stiff and hard as steel, twenty millimeters in length, about one-half millimeter in thickness, soldered parallel three millimeters apart to copper bars, which run through a light handle.

The current strength necessary for electrolysis of nasal spurs is from fifteen to thirty milliampères, measured with the resistance of the spur in the circuit, and to supply this current from fifteen to twenty cells of a galvanic battery would ordinarily be used, with a corresponding electromotive force of from twelve to twenty volts or more. The inconvenience of this apparatus, and especially its unreliability when called into use only at irregular and prolonged intervals, has deterred many from trying the electrolytic method. I have avoided these annoyances by adapting the Edison electric-light circuit to the purpose by means of lamp resistance and the McIntosh current-controller. The duration necessary depends somewhat, of course, upon the current strength; but with the meter registering from fifteen to thirty milliampères I have not found it necessary to exceed from six to eight minutes for the devitalization of cartilage.

### MIXED CARTILAGINOUS AND BONY SPURS.

*Bony spurs.*—These usually commence well within the nostril and may be simply sawed off, sacrificing the mucosa, for the liability to subsequent incrustation is much less far back in the nose, but, if the anterior end of the spur lie well forward, its mucosa should be saved by the process above described. Gleason's self-retaining speculum is adjusted, an incision through the cartilaginous portion made from below upward, a De Vilbiss hand-saw inserted and worked quickly, upward, taking care not to let the rear end of the spur escape, till no connection remains but mucosa, which is then cut by scissors, the fragments grasped by strong serrated forceps and withdrawn. Occasionally it is necessary to meet the upward saw-cut by one from above downward. If the spur be formed very close to the floor of the nose the author's curved saw devised for this purpose will be more easily inserted. One should estimate carefully and remove as much as possible of the spur without causing perforation. Immediately after operating, the nostril should be packed with 10 per cent. moist iodoform gauze to prevent hemorrhage, which is very liable to recur after the patient has left the office, which packing can be carefully removed, part on the second and part on the third day.

Other means are occasionally employed for the removal of spurs, either alone or assisted by the saw. Next in importance and usefulness are nasal drills and trephines rotated at high speed by an electric

motor. These I find very useful for trimming off remaining fragments and angles after the use of the saw, rather than as a substitute for the saw, and for exceptional cases rather than for routine practice. The same may be said of chisels and ecchondrotomes. Electric saws driven at high speed by a motor expedite the sawing operation, but on the whole are scarcely necessary.

DEVIATION OF THE SEPTUM.

*Cartilaginous deviation.*—When strictly cartilaginous and wholly near the nostril, this can often be corrected by the same submucoperichondrial operation described in connection with strictly cartilaginous spurs. I have found this procedure most successful for perpendicular angular flexion of the end of the cartilage and for semihorizontal flexion with redundancy to the point of causing dislocation or turning downward of the columnar cartilage. After separating the mucoperichondrium from the convexity, the cartilage is grasped by forceps and the redundant, deformed edge removed, or an oval or triangular piece resected, care being taken not to penetrate the mucosa of the opposite side. The mucoperichondrium is then stitched and an iodoform gauze plug inserted for support.

When the deflection is of the bulging or angular sort, involving the whole cartilage and encroaching, perhaps, upon the bone, therefore situated well within

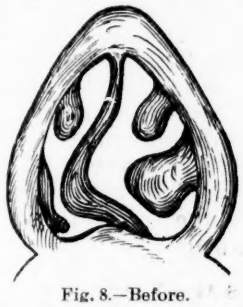

Fig. 8.—Before.

Fig. 9.—After.

the nostril, the most satisfactory operation is as follows: A crucial incision, the lines crossing at the point of greatest convexity and extending well to the circumference of the bulge, is made by a bistoury entirely through the septum, from one side to the other. The little finger is then inserted into the narrow nostril and the septal fragments pushed forcibly into the opposite nostril. In order to destroy the resiliency of the top fragment it may be necessary to weaken its base by an additional cut, but not extending through its whole thickness. The slightly overlapping fragments are then kept in place by an iodoform gauze packing in the narrow nostril, which may be replaced in three days by a suitable size of Asch tube, which is worn for six weeks, to serve as a splint. If the tube is not at hand, the gauze packing may be continued, or a splint extemporized by wrapping a piece of tin with iodoform gauze till the proper size and shape is attained. I have made the operation usually with cocain anesthesia, and in the sitting position, but with children and timid persons general anesthesia may be induced, in which case the posterior nares should be plugged before the incisions are made and the operation must be done largely by the sense of touch. (Figs. 8 and 9.)

*Mixed cartilaginous and bony deviation.*—These may often be corrected by the operation just described, the placing of the cartilage in the median line, carrying with it the bone, if but little of the latter is deflected. If more bone be involved it can still, at times, be straightened after making the cartilaginous incisions by strong lateral pressure far back with the finger, counterpressure being made against the dorsum of the nose, a sort of "green-stick" fracture being produced.

*Bony deviation.*—For this class and also for the preceding, when not yielding to this manipulation, Adams' or Roe's fracturing forceps may be employed. This I formerly attempted only under general anesthesia, but recently I have satisfactorily made several such operations under cocain anesthesia, supplementing the crucial incision in the cartilage by a fracture of the bony part of the deflected septum by compression by means of Adams' forceps.

*Combined excrescence and deviation of the septum.*—If the excrescence be large and the deviation slight, removal of the former may be all that is required; or if the excrescence be small and the deviation great, correction of the latter alone may suffice. If it is desired to remedy both features, and at the same sitting, the spur may first be removed by one of the methods above described and the deviation then corrected. The only objection to this is the contention that if the abscission of the spur involve the sacrifice of much mucosa, union of the septal fragments at their cut edges in their new position will be endangered. Practically I have not encountered this objection; nevertheless I deem it best, unless the spur be a large one, first to correct the deviation; often it is then found that the spur has dwindled into insignificance.

Fig. 10.—Before.

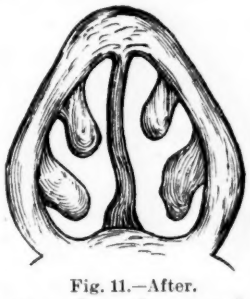

Fig. 11.—After.

In young persons, when the deviation is a gradual slant rather than a bulge, with a long, ledge-like spur extending far back, I have obtained excellent results by abscising the spur as close as possible to the opposite side without perforating, and then simply pushing the weakened septum into the median line, where it may be held by a packing replaced every other day for three weeks. (Figs. 10 and 11.)

39 Washington St.

## THE MAXILLARY SINUS.

### CHRONIC EMPYEMA THEREOF; ITS TREATMENT.

Presented to the Section on Laryngology and Otology, at the Forty-ninth Annual Meeting of the American Medical Association, held at Denver, Colo., June 7-10, 1898.

BY J. A. STUCKY, M.D.

LEXINGTON, KY.

So much has been written upon this subject that it may seem superfluous at this time to again bring it before you for consideration. That empyema of the nasal accessory cavities, especially the antrum of Highmore, is far more frequent than is generally supposed, and as frequently overlooked, I think "may go without saying." Failure to relieve many of our so-called "old catarrhal cases" after we have removed

all visible obstructive and diseased tissue in the nasal and pharyngonasal cavities, is due to not recognizing suppurative and other pathologic conditions in the accessory cavities. Empyema of the maxillary sinus is caused most frequently by dental caries, and the removal of a dead tooth that penetrates the cavity usually gives prompt relief, unless the suppurative process has continued long enough to result in caries and granular or polypoid degeneration of the lining intracellular membrane.

The cause which interests us most is that which comes from the nose, or infection in the frontal or ethmoidal sinus. Atrophic rhinitis or ozena may be a possible cause of suppuration of the antrum by infection or infiltration through the ostium maxillare. In five of my cases where marked atrophic trouble existed, with shrunken and degenerated (polypoid) middle turbinate, with no dental caries or evidence of suppuration in any of the other accessory cavities, the antrum was full of pus and granulations. In these cases I am at a loss to know to what to attribute the empyemic condition, unless it be the infection from the mucopurulent and purulent secretion from the nasal cavities. Another probable cause is the damming up of the ostium maxillare by nasal polypi or enlarged middle turbinate, the retained secretion undergoing such a change as to result in irritation, inflammation and suppuration.

The symptoms of this trouble are frequently undefined and misleading. Very little attention is drawn by the patient to the cheek. The pain most complained of is in the back of the head and the supraorbital and temporal region. I need not emphasize the necessity of a very careful examination in order to make an accurate diagnosis. Tapping sharply with a heavy probe the first, the second, and the canine teeth, will cause pain if the suppuration is extensive or if there is dental caries. Transillumination is frequently a great aid, but is by no means certain. When in doubt, the exploratory puncture with trocar and canula or small burr attached to a dental engine, will settle the question beyond a doubt.

In the treatment of these cases our first attention should be directed to the nasal cavity. If there be any obstruction to free drainage or respiration, it should be removed. If the middle turbinate is so enlarged as to encroach upon the middle meatus, or enough to interfere with the ostium maxillare, the anterior portion should be removed. In the majority of cases I have found this operation of turbinectomy to be of greatest value. If the ethmoid cells are involved in the suppurative process or have undergone a polypoid degeneration, these should be thoroughly dealt with, and the same may be said of the frontal sinus. Sometimes we find the maxillary sinus filled with pus and granulations, with no symptom of frontal or ethmoidal disease, but a close examination often reveals trouble in one or both of these—more frequently the ethmoid.

Having attended to the nasal cavity, the operation upon the maxillary sinus is performed in the following manner: If necessary the second molar is extracted, and with Buck's mastoid drill a large opening is made through the alveolar process into the antrum. With a sharp-edged bone spoon the opening is made smooth, and shaped to admit the introduction of a medium or large-sized speculum, so the cavity can be illuminated (with head mirror) and thoroughly examined. If granulations, polyps, necrosis, or caries exist, Myles' curettes are used to remove all diseased tissue. After this is done the cavity is thoroughly irrigated and loosely packed with iodoform gauze. The first dressing is not removed for forty-eight hours, unless elevation of temperature and throbbing pain indicate the necessity for so doing. After the removal of the first dressing the antrum should be irrigated daily, the opening and drainage maintained by a tampon of sterilized or iodoform gauze. I think that in many cases, where a large opening is made, and the cavity thoroughly cleaned and drained, spontaneous healing takes place "by the filling up of the antrum with connective tissue." The nasal cavities should be cleaned with alkaline antiseptic spray, anteriorly and posteriorly.

Of the cases which I reported at the meeting of the Kentucky Medical Society in 1896,[1] all remain free from antral trouble, and I desire to emphasize the superiority of entering the antrum through the alveolar process, rather than the canine fossa. By the latter procedure, in order to make an entrance sufficiently large, we are liable to split the thin bony (external) wall, leading to prolonged and painful complications. The tendency of the soft parts of the cheek to overlap and close the opening seriously interferes with drainage and is a source of constant annoyance and irritation to the patient. A counter-opening through the inferior meatus to facilitate drainage, I have never found necessary, and do not think it advisable. The gauze drainage has proved far more satisfactory to me than either metal or rubber tubes.

DISCUSSION.

Dr. MELVILLE BLACK—I desire to endorse two points made by Dr. Stucky: the place of making the opening into the antrum, and the non-use of tubes. The loss of a tooth is a small thing to be considered when a cure is to be accomplished in a disease so essentially chronic and hard to cure. By making the opening through the alveolar process, a hole can be made large enough to remain open a long time. The tube causes granulation tissue formation about the entrance of the tube into the antrum. This end of the tube soon becomes covered with granulations, repeated curettement being required to prevent it.

I am surprised that Dr. Stucky has not laid more stress upon the extreme chronicity of this disease. My experience has been that it is a very hard disease to cure, that the patient becomes discouraged long before he is cured, and is liable to drift into other hands.

The tendency to granulation tissue formation after curettement is marked. A few days after curettement it has been my practice to cauterize the interior of the antrum with pure trichloracetic acid; this will prevent granulation tissue formation and hasten resolution. To apply the acid the interior of the antrum should first be cocainized; a piece of cotton is wound tightly on the end of a cotton carrier so that we will have a round ball of cotton on the end of the probe, which is about ¼ inch in its diameters. This is dipped into the acid, when it is carried into the antrum and the latter wiped over thoroughly with it. The membrane caused by the cauterization is exfoliated in about ten days. No reaction follows the application of this acid. Another method I have practiced to avoid granulation tissue formation is that of packing the antrum with strips of linen or muslin ¼ inch wide, saturated with balsam Peru.

I desire to call attention to a method I have of opening the antrum for acute empyema: A small trephine, propelled with a dental engine, is passed into the antrum through the palatine side of the alveolar process. Drainage and cleansing is usually all that is required; it is not desirable to sacrifice a tooth, and this opening will remain patent long enough to accomplish this.

Dr. EMIL MAYER—Operations for the drainage of antral abscess, made either through the alveolar process or anterior to the malar ridge, are the usual methods employed. Drainage is quite as effectual, and less annoying to the patient, when the operation is done posterior to the malar ridge. Regarding puncture, we must bear in mind that puncture if made should

[1] American Practitioner and News, June 27, 1896.

be performed properly, and that the thinness of the bone at the proper spot makes such procedure easy of performance. The point I enter is about one and one-fourth inches from the external orifice. Many of these antral abscesses are associated with ethmoidal disease, and here I use, after curetting, the method of washing out the cavity by attaching the silver tube to the ordinary antitoxin syringe. It has been very effective in my hands and is very convenient.

Dr. GRADLE—I would like to ask Dr. Stucky what length of time was required for a cure in the different patients, and what percentage of failures he has had?

Dr. RANDALL said more stress might be laid upon the not infrequent occurrence of empyema of the maxillary sinus as a mere result of drainage of the frontal or ethmoid cells into a healthy or secondarily involved Highmore. No amount of treatment of the lower cavity will cure the condition. As to the point of opening, if man were as upright as supposed, an opening directed downward would be best; but in point of fact we find that other influences, such as capillarity and the suction effect of air currents through the nose, surpass the force of gravity in determining the easiest direction of drainage.

## THE CLIMATE OF COLORADO.

### ITS INFLUENCE UPON THE NASAL MUCOUS MEMBRANE.

Presented to the Section on Laryngology and Otology, at the Forty-ninth Annual Meeting of the American Medical Association, held at Denver, Colo., June 7-10, 1898.

BY MELVILLE BLACK, M.D.

Professor of Ophthalmology and Otology, Gross Medical College; Formerly Professor of Laryngology and Rhinology in the Medical Department of the State University.

DENVER, COLO.

The most important function of the nose is that of warming and moistening the inspired air. According to the experiments of Aschenbrandt and Keyser, 7715 grains of fluid are extracted every twenty-four hours from the turbinated bodies by a process of serous transudation.

According to the United States Weather Bureau reports, the average relative humidity for the years 1895–96–97 for the following cities is: San Francisco, 81 per cent.; Portland, Maine, 80 per cent.; New Orleans, 77 per cent.; Duluth, 76 per cent.; New York, 74 per cent.; Seattle, 74 per cent.; Chicago, 70 per cent.; Philadelphia, 68 per cent.; Omaha, 65 per cent.; Salt Lake City, 54 per cent.; Denver, 49 per cent.; Yuma, Ari., 41 per cent. It is to be seen that the average relative humidity of Denver is about 50 per cent. less than upon the Alantic and Pacific seaboards. It is therefore necessary that, to bring the inspired air to saturation, a nose in Colorado should secrete about twice as much fluid as is required at New York, San Francisco or New Orleans. To enable the nose to secrete this additional amount of fluid there must be an additional amount of blood sent to the vascular plexuses of the turbinated bodies. It is from these vascular plexuses that the major part of this fluid, consisting as it does of the watery constituents of the blood, is obtained. This increased blood-supply is a compensatory function, and is called forth by the extreme dryness of the atmosphere.

Before discussing the results of this extreme vascular dilatation, the influence of our altitude must be taken into consideration. Denver is one mile above sea-level. The atmospheric pressure is about twelve pounds to the square inch, or three pounds less than at sea-level. A person coming to Denver from sea-level experiences a dilatation of his entire superficial capillary system because of the lessened resistance of the atmospheric pressure. To keep these superficial capillaries in a state of contraction requires an increased amount of vasomotor nerve force, and until the individual has been here for some weeks he may not be able to supply it.

I would not assert that this superficial capillary dilatation obtains in all subjects upon their arrival in Colorado, but of the fact that it does obtain in a goodly number I have had ample verification. The vascular plexuses, exposed as they are, give greater evidence of insufficient vasomotor nerve control than any other portion of the body. The nasal symptoms of this vascular dilatation are those of a mild vasomotor rhinitis. It may be possible that some of my hearers have these symptoms now. The time required on the part of the economy to supply this additional vasomotor nerve force varies from a few days to a few weeks. That the vascular plexuses do not contract *pari passu* with the other superficial capillaries is evident, because of the increased function these parts have to perform. I believe that our altitude plays an important part in enabling the nose to quickly adapt itself to supplying the additional moisture required by our very dry atmosphere.

You will naturally ask, to what does this vascular dilatation of the turbinated plexuses lead? We know that increased function of any part of the body leads to hypertrophy. There is no exception to the rule in this instance. We know that in the nose hypertrophy of the turbinated bodies sooner or later leads to sclerosis. My observations have convinced me that hypertrophy of the turbinates gives way to sclerosis sooner in Colorado than in more humid climates. The newly formed tissue of an acute hypertrophy is subject to more rapid contraction than a hypertrophy that has been chronic in its course. I have observed many cases in which hypertrophy was slow to take place; instead, there was a long period of intumescence or boggy condition of the turbinates.

The term "sclerosis" which I use is not to be confounded with atrophy. The latter condition does not exist in these cases, but rather a condition of constriction, because of the contraction of this newly formed tissue. The vascular plexuses are so compressed that there is not sufficient serous transudation to supply the amount of moisture required by the inspired air. The muciparous glands are still operative, but as only 10 per cent. of the nasal secretion comes from these glands, it is plainly evident that it alone is insufficient to bring the inspired air to saturation. When the sclerosed stage is present we have absence of all the symptoms of stenosis, so annoying during the hypertrophic stage. There is usually free breathing-space unless other obstructions are present. The patient complains of thin, dry secretion forming in the anterior nares, of the nasal chambers feeling dry, and finally, of an accumulation of postnasal secretion. The latter symptom results from the postnasal mucous membrane being called upon to perform the function of the turbinated bodies. It is not endowed with such a vascular apparatus as are the turbinated bodies, and in consequence soon becomes diseased by attempting to perform an abnormal duty. The typic condition of the nose of an old resident of Colorado is that of sclerosis. There are few who escape it.

The nose of the human race is a degenerate one at best. The question arises: Are we worse off than our neighbors in more humid climates? I should say in answer to this question that, inasmuch as sclerosis does not lead to serious consequences, we are not. The object of this paper is to point out that our climate, though greatly benefiting pulmonary troubles, has not the same beneficial influence upon nasal dis-

orders. A case of hypertrophic rhinitis sent here will arrive at a stage of sclerosis sooner than it otherwise would. The patient will not be required to use the handkerchief so often, but for a time will be more annoyed than ever by stenosis. Atrophic rhinitis is not benefited by a residence in Colorado. The odor is less because the dryness of the atmosphere militates against decomposition. The scab formation is harder, however, and the scabs more difficult of removal.

I believe that myxomatous degeneration is rarely acquired here. We see the usual number of cases, but it is because most of our residents formerly lived elsewhere. My experience has been that my myxomatous patients have had polypi before coming to Colorado. I have noticed that polypi once active are as annoying to the patient and as hard to eradicate here as where they originated. Septal deformities are operative in increasing stenosis during the hypertrophic stage as well as in the stage of sclerosis. Modern nasal surgery calls for their correction here as elsewhere.

Denison Building.

DISCUSSION.

Dr. BLACK—We hoped to have Dr. Geldea of Colorado Springs with us to present a paper on the influence of our climate on the ear. It is unfortunate that he can not be with us. My experience has been that non-suppurative inflammation of the middle ear is as liable to progression in Colorado as elsewhere. I have frequently had patients tell me that their deafness had markedly progressed since coming to Colorado, but it is a question in my mind whether their statements were correct.

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## FALSETTO VOICE IN THE MALE.

### REPORT OF FIVE CASES.

Presented to the Section on Laryngology and Otology at the Forty-ninth Annual Meeting of the American Medical Association, held at Denver, Colo., June 7-10, 1898.

BY G. HUDSON MAKUEN, M.D.

Professor of Defects of Speech in the Philadelphia Polyclinic and College for Graduates in Medicine; Laryngologist to St. Mary's Hospital and the Frederick Douglas Memorial Hospital.

PHILADELPHIA.

The falsetto voice, as its name indicates, is essentially a false voice. Its chief characteristics are a high pitch and a thin, piping quality. Its resonance is limited to the region of the head, and therefore it lacks volume and strength. There is also a manifest effort in its production which makes it appear forced and unnatural. The labor seems altogether out of proportion to the results attained. It suggests weakness and a lack of muscular control. It is somewhat characteristic of the eunuch, and therefore it has been called the eunuchoid voice. This quality is not uncommon in the female, whose larynx is comparatively small and delicate and whose nervous organization is often highly tensioned, but it is rare, and therefore more noticeable, in the male. In an experience of more than twenty years as a vocal teacher, not more than ten or twelve cases have come under my observation, and only five of these have reported to me for examination and treatment. A rather close study of these cases, both externally to the larynx and internally by means of the laryngoscope, has revealed some interesting facts as to the nature and cause of this peculiar affliction, for so I think it must be regarded. In the first place, viewed from without, we find the larnyx in an abnormally high position during the production of this voice. The high position is brought about by a faulty action or a faulty co-ordination of the extrinsic muscles of the larynx. These extrinsic muscles may be divided into two sets and designated respectively the levator laryngei and the depressor laryngei.

In the production of the normal voice there is a contention constantly going on between these two sets of muscles, and thus the larynx is held nicely poised in the correct position, and more or less firmly fixed against the spine for each tone of voice and for each syllable of speech. If this natural poise of the larynx in the correct position be interfered with in any way, there will be an immediate change both in the character or timbre and in the pitch of the voice. The change in character is due to the change in certain resonators of the voice, and the change in pitch to the varying conditions of the vocal ligaments. If, for instance, the larynx be pulled down below its normal position either by the over-action of the depressor or the under-action of the levator muscles, the voice will be heavy and sepulchral in character and unnaturally low in pitch; and if, on the other hand, the larynx be pulled high up in the throat by a reverse action of the extrinsic muscles, we shall have a thin, high-pitched voice, and if at the same time there be a looseness of the intrinsic muscles the resonance will be impaired and the result will be the falsetto or eunuchoid voice.

It will be observed that this quality of voice is due not only to the high position of the larynx, but also to the consequent unnatural adjustment of the cartilages of the larynx and to the effect which this adjustment has upon the vocal ligaments. Another important factor is probably a lack of rigidity or contractility in the intrinsic muscles of the larynx, thus cutting off the resonance which comes from these muscles and the surrounding parts to which they are attached.

My first case was a young clergyman, who affected this quality of voice because it seemed to him more soft and agreeable than the resonant chest tone. So strongly and favorably did it appeal to his own ear and to his sense of the fitness of things that he was not persuaded to give it up, although it would have been quite possible for him to do so with a lttle effort and training. In fact, he could produce the true chest voice, but he said it seemed hoarse to him and he preferred not to make the change; and thus was illustrated the old adage: "You may lead a horse to water but you can't make him drink."

My second case was referred to me by a well-known laryngologist in Philadelphia. The patient was 15 years of age, and a tinsmith by trade. At about the time of puberty he went in bathing while overheated and developed a severe laryngitis and lost his voice almost entirely. The usual remedies were applied, and the only sound he was able to produce afterward was that of the falsetto character. Local applications were made to the larynx for a long time, and electricity was applied in all its various forms, but with no effect whatever upon the character of the voice. It took but a short time to discover that he did not appreciate the fact that his voice was different from that of his fellows. He had been told that it was peculiar, but it sounded all right to him. After two or three visits, at each of which he was given various exercises to correct his errors in voice production, he was enabled to sound a good chest note, and when he succeeded in getting it, he said, in a clear resonan voice: "Is that the way you want me to talk?"

said, "Yes"; and he said, "Well, I think I can talk in that way now all the time," and I suppose he did, for he never appeared at my office again.

My next case was a young man 17 years of age, referred to me by Dr. Max Thorner of Cincinnati. The patient had always been strong and vigorous, except on two occasions, when he had pneumonia—the first attack at 13 and the second at 14 years of age. When he was convalescing from the latter attack the larynx underwent the change which is usual at that period of life, and the voice presented a peculiar and unusual character. Instead of being a combination of the chest and falsetto tones, the former breaking into the latter, as is common in the male voice at puberty, the chest tone was absent entirely, and in its place there was complete aphonia. The voice was a mixture of a whisper with the falsetto tone, the one breaking into the other in a most curious manner and at the most unexpected times.

The patient usually began speaking in a whisper, which by very great effort he soon forced up into a peculiar falsetto squeak, which seemed ludricous to those not appreciating the serious aspect of the case. At times it was with great difficulty that he could even whisper or make himself understood at all, and, being an exceedingly bright and intelligent youth, his affliction bore the more heavily upon his mind and made the past three years of his life very miserable. The young man comes from the South, where the humorous side of life is well developed, and his friends at first regarded the whole matter as a huge joke, called him a gosling, and advised him to go back to long dresses. His nervous system was somewhat impaired by his recent illness, and his larynx underwent a greater change than is usual—for it is now a very large one—and he was unable to adjust the various parts of the vocal machinery to the new and varying conditions. Three things, therefore, may have combined to bring about this unfortunate state of affairs: an impaired physical condition, a sudden and unusual increase in the size of the larynx, and a nervous anxiety brought on by the sportive jeers of his friends. Soon after the onset of the trouble he had various minor operations performed in the throat and nose. Hypertrophied faucial tonsils were reduced and a spur was removed from the nasal septum, but no improvement in voice followed.

He was seen first by me in September of last year. A regular course of breathing exercises was instituted for the development of the respiratory muscles, and all attempts at speech were for a time interdicted. There was a marked tremor of all the organs of speech. The pharynx was cocainized and a careful laryngoscopic examination revealed nothing unusual except that the larynx was somewhat above the average size. The vocal cords overlapped both anteriorly and posteriorly in the falsetto tone, and the glottis presented the usual elliptic shape in the aphonic condition. It was observed that during phonation there was a strong contraction of the palatopharyngei muscles, drawing the larynx high up in the throat. To counteract this up-pulling of the larynx, the tip of the index finger was placed on the dorsum of the tongue, well back against the anterior surface of the epiglottis and firm downward pressure made, and at the same time with the right index finger in the groove on the upper border of the thyroid cartilage externally the larynx was held in a fixed position and the patient was told to say "ah," which he succeeded in doing in a low chest tone for the first time in his life. After several repetitions of the tone with the larynx held for him in this position he was able to control it himself, and after two weeks' faithful practice he went home with a full, rich chest tone which he used in speech with remarkable facility, while it was with great difficulty that he could imitate his former mode of speech.

The next case was a boy 15 years of age, referred to me by Dr. John B. Roberts of Philadelphia. His aunt, who came with him, said he had always talked like a girl, and that sometimes his voice would fail him entirely and he could not talk at all; that he was a very nervous boy, and came from a nervous and consumptive family. At 7 years of age he had measles, complicated by a very severe attack of la grippe. He had high temperature and was delirious for some time. He is now weak and nervous, and complains a great deal of headache. He fainted during the throat examination. Like the last case, the larynx was found to be pulled up high in the throat by a kind of spasmodic contraction and hardening of the levator laryngei muscles. The muscles under the chin, the geniohyoid and hyoglossus were almost as hard as it is possible to make the biceps by flexing the forearm, while the depressor laryngei were weak and flabby. He had some slight tonsillar hypertrophy, which was reduced, and he was put on a general tonic treatment. In addition to this, he was put on a course of what we call laryngeal muscle training by methods which I shall describe briefly after referring to my fifth case.

This boy was 15 years of age. He was nervous and by no means strong. His maternal grandmother and uncle and his paternal grandfather and uncle had died with consumption. His voice was normal until about the time of puberty, when he took a severe cold. It then seemed rough and harsh to him, and he tried to hold it back, with the result of acquiring the falsetto voice. Like Case No. 2, he himself was quite satisfied with his voice, and he said it sounded better to him than the average voice he heard. His father thought it was his own fault that he did not speak as other people. Upon examination it was found that the adjustment of the cartilages was very unusual. The thyroid cartilage was tilted forward and downward so that the pomum Adami was very prominent, and the thyroid rested upon the upper border of the cricoid cartilage, and the two appeared to be united anteriorly. They could not be separated, and there was no cricothyroid notch.

In some respects the last two cases were similar. They were of the same age; they were both of the neurasthenic type, and they both inherited a tubercular taint. The onset of the trouble was different, however, the former having always used the falsetto voice, while the latter acquired it at the age of puberty. The treatment was similar for both. In fact, the same general plan of treatment was followed in all these cases, and the results were prompt and entirely satisfactory.

Let me explain the plan of treatment. In the first place the general physical condition of the patient was looked into, and nervine tonics were indicated in every case. Then the nose and throat conditions were looked after, and local treatment was resorted to pretty generally, and slight surgical interference in three of the cases. These things are all important and necessary, but not in themselves sufficient to correct the defect. They are only adjuvant to the

thing that cures, viz.: muscle training. The direct cause of the difficulty was found to be in every case a faulty co-ordination of certain laryngeal muscles, and this faulty co-ordination was mainly extrinsic to the larynx. The extrinsic muscles were not uniformly developed. The levator laryngei were overdeveloped while the depressors were underdeveloped and there was a lack of proper laryngeal balance. The weak muscle was singled out and trained into right action. The best way to do this is to teach the voluntary control of this muscle, and then, by repeated contractions and relaxations, the patient may strengthen it to do its normal work, and thus acquire a harmonious action of the laryngeal muscles. Massage of the larynx was also helpful in restoring the balance and harmonious action of these muscles.

## FORMALDEHYDE.

### ITS USE IN THE TREATMENT OF TUBERCULAR LARYNGITIS.

Presented to the Section on Laryngology and Otology, at the Forty-ninth Annual Meeting of the American Medical Association, held at Denver, Colo., June 7-10, 1898.

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Among the numerous remedies used in the treatment of tubercular laryngitis the following are the most prominent: lactic acid, guaiacol, iodoform, various remedies such as the zinc and copper compounds introduced by means of cataphoresis, and latterly formaldehyde. It seems proven that lactic acid is decidedly most efficient upon the ulcerated tubercular tissues, but there is no proof that it penetrates beyond the unbroken membrane. Recognizing this fact Heryng has recommended the scarification of the tissues before its application. Following a thorough application of lactic acid there is considerable pain after the effects of cocain have worn off, which lasts for many hours and is exceedingly distressing in some cases. As to the advisability of curetting the unbroken structure and introducing lactic acid there is considerable doubt. In my own experience, owing to late methods of treatment, I have limited the use of the curette to indolent tubercular ulcers, in the hope that stimulation may promote healthy granulation, which it often does.

Guaiacol applied upon infiltrated membrane has a very good effect, but is much more effective if injected into the tissues. Its most prominent result is the alleviation of the dysphagia, which is due to the well-known analgesic effect of guaiacol upon the peripheral nerves. It also probably arrests the progress of tubercular infiltration.

Iodoform is used as a supplement to other applications; in this list also come aristol, dermatol and the coal-tar products. The use of other remedies by means of cataphoresis is as yet in the experimental stage.

Dr. S. Solis-Cohen, in the *New York Medical Journal*, Oct. 24, 1896, reports favorable results in tubercular laryngitis from the use of formaldehyde. Since that time I have had considerable experience in the use of this remedy, and believe that it is the most useful treatment both in ulcerative and infiltrative types of the disease that I have ever used. It has been my custom to thoroughly cocainize the larynx before application, and to begin with a weak solution of formaldehyde of from .5 to 1 per cent. and to gradually increase the strength of the solution to 10 per cent. After the application of formaldehyde to ulcerated areas I have insufflated aristol, iodoform and other powders. Sometimes I substitute for these menthol, 20 to 60 grains to the ounce of liquid vaselin. If the larynx has been thoroughly cocainized, the pain from the strong solutions of formaldehyde will be very slight. If, however, a weak solution of cocain is used, the pain is very severe for several minutes, gradually decreasing, so that in ten minutes the larynx is perfectly comfortable. These applications I make two or three times a week as the exigencies of the case may demand.

It is necessary that the surfaces be clean before applying formaldehyde. For this purpose the usual method of using peroxid of hydrogen followed by an alkaline spray is the best. In the interim between the treatments by the stronger solutions, I direct my patients to use a mild solution of formaldehyde, not stronger than one drop to the ounce of water, and spray the throat night and morning, or oftener, if there is discomfort. The rapidity with which this mild solution will relieve the pain in the larynx is exceedingly gratifying.

I have frequently had cases in advanced pulmonary and laryngeal tuberculosis, in which it was necessary to use a solution of cocain to insure comfort in swallowing, which were relieved to such an extent by this weak solution of formaldehyde as to be enabled to forego the use of cocain entirely. This is no small item in a chronic case, as the effect of this drug on the nervous system is positively detrimental. From my experience I am led to believe that while the first effect of the solution is of a mild stinging character, its secondary effect is certainly analgesic. Latterly, I have been employing eucain instead of cocain in some cases, with quite satisfactory results, but with a preference for the latter, owing to its power of contracting the vessels. The application of formaldehyde to tubercular variations causes them to contract and finally disappear. In several instances I have shrunken up vegetations in the interarytenoid commissure, which were producing aphonia, by mechanic interference with the movements of the arytenoids, so that the voice was markedly improved.

I wish to point out one danger in the use of formaldehyde—the possibility of its producing a gangrene of the parts. It has been shown by Cohen that when formaldehyde is applied to a rabbit's ear in a concentrated solution, the part dies and is cast off; but bacterial infection does not take place. I believe this is due to the peculiar effect formaldehyde has upon the tissues and also upon the blood-vessels, causing a degeneration of their coats, and finally cutting off the blood-supply. This is not unreasonable to suppose, as the formicaldehyde gas being liberated penetrates the tissues and forms peculiar chemic compounds with them. Personally, in the laryngeal application of the remedy, I have never seen such results when used as I have mentioned above. Owing to this penetrating power of formaldehyde, it has an enormous advantage over lactic acid, which does not penetrate the unbroken surface. In the simple infiltrative types I have repeatedly noticed the superiority of formaldehyde over lactic acid in relieving pain. While I must admit that pain is not a common symptom of infiltration, yet on pressure being made on these tissues by the epiglottis and food, incidental to

deglutition, they do become painful and our patients seek relief.

The climatic treatment of pulmonary tuberculosis is practically the only one which has yielded satisfactory results up to the present, and in tubercular laryngitis this treatment applies peculiarly. As the patient's general condition improves so may we expect the natural resistance of the laryngeal tissues to be increased. This gives us a great advantage in this altitude over the results to be expected by any line of treatment at sea level. I have seen cases of tubercular infiltration of the larynx following pulmonary tuberculosis arrested and remain quiescent for nearly three years, which have received no treatment whatever. This is to be explained solely by the beneficial effect of the climate of Colorado upon the pulmonary condition, improving the general health and increasing the power of resistance. However, in the ulcerative conditions I have never seen a spontaneous cure either in Denver or in the East.

Incidentally, in passing, I would like to state that I have two cases of unilateral infiltration of the aryepiglottic fold corresponding to the affected lung. Whether there is any relation between the lymphatic, blood and nerve supply of the left chest and that of the larynx to such an extent as to favor the production of local tubercular trouble of the same side of the larynx is an interesting question.

In summing up the uses of formaldehyde in tubercular laryngitis, I present the following;

1. It is safe to allow the patient to use a mild solution of 1 to 500, two or three times a day.

2. The relief to the dysphagia is very marked, and in many cases formaldehyde is a good substitute for cocain.

3. Its most brilliant results are to be seen in the vegetative and ulcerative types.

4. It is the most satisfactory remedy I have ever used in infiltrative cases.

5. The results from the use of formaldehyde are probably due to its effect upon histologic tissues as well as upon the bacilli themselves.

6. The stronger solutions, from 1 to 10 per cent., should be applied two or three times a week, as deemed expedient.

California Bldg.

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## PARAMONOCHLOROPHENOL.

### ITS USE IN THE LOCAL TREATMENT OF LARYNGEAL TUBERCULOSIS.

Presented to the Section on Laryngology and Otology at the Forty-ninth Annual Meeting of the American Medical Association, held at Denver, Colo., June 7-10, 1898.

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The symptoms of tubercular laryngitis are so troublesome and inconvenience the patient so much that anything in the way of additions to our armamentarium in its treatment merits attention. Although constitutional involvement is the rule and the ultimate prognosis bad, it is not necessarily always so, and recoveries do take place. There is also the case—denied, it is true, by some—where the larynx alone is affected. In many cases the local laryngeal lesion is the thing most complained of, even in cases where the constitutional lesions are considerable. The hoarseness, difficulty of speech, and perhaps difficulty in swallowing, are more troublesome than the pulmonary symptoms, hence it is our duty to do all we can toward the cure and relief of the laryngeal manifestations. Laryngeal tuberculosis manifests itself in two forms. The first, characterized by a general infiltration of the laryngeal structures, does not seem to me to offer very much, so far as topical applications are concerned. Submucous injections have been used, but of them I have no experience, having regarded this form as decidedly unfavorable for local treatment. In the second and larger class of cases, characterized in the main by ulcerations and erosions of the true and false cords, by interarytenoid swelling, granulations and ulcerations, by the patient complaining of hoarseness and it may be slight difficulty in swallowing, with only moderate pain, the results of local treatment are often surprisingly good. Especially is this apt to be the case if the pulmonary lesions are not extreme. Under local, combined with suitable constitutional, treatment the ulcerations heal, the cords become smoother, the voice improves, and the patient feels better. Even though there is a final succumbing to the general tuberculous process, the laryngeal conditions are so much improved that we are more than compensated for the efforts put forth in that direction.

The routine treatment mostly used for this purpose has been curettement when indicated and the use of lactic acid. As an addition to that treatment, I wish to make a plea for the use of paramonochlorophenol as giving better and more rapid results than lactic acid alone. Paramonochlorophenol is phenol with one H replaced by one Cl. It is only slightly soluble in water, but freely so in glycerin and water. Opinions as to its value have been somewhat contradictory. Spengeler of St. Petersburg[1] is cited as warmly recommending its use and as having reported ten cures out of twenty-six cases. Hedderich[2] reports thirty cases treated in Jurasc's clinic with fair results, all the patients admitted being improved. The difficulty in swallowing and irritability of throat speedily disappeared, the breathing became freer, the ulcers became clean and slowly healed, and the edema and infiltration grew gradually less. Two cases seemed to be cured; in three nausea and vomiting were produced, but as this often attends the use of any topical application, it is not necessarily a contraindication. In all his cases the usual constitutional measures were also employed.

I have used paramonochlorophenol in a number of cases during the last year and a half, using it in from 4 to 10 per cent. solutions in equal parts of glycerin and water. When not preceded by cocain, it at first causes some pain, quickly followed by a certain degree of anesthesia somewhat like that of carbolic acid. Like lactic acid, it does not seem to injure any sound tissue with which it may by chance come in contact. On one occasion, when the applicator by mistake went into the pyriform sinus, some pain and edema followed, the patient complaining for a day or so of discomfort. This is the only time that I have had any unpleasant experience with it, and this might just as well have happened with anything else. It produces a white eschar of slight depth, disappearing in a short time. It appears to act both as a powerful astringent and as a caustic. I have used it to

[1] Jour. of Laryng., Vol. xi, p. 286.

[2] Loc. cit.

the exclusion of any other local application, but not as a rule, having found it to work most advantageously when used in connection with lactic acid, following the application of the latter. The tubercular tissue disappears more speedily and the ulcerations clean more rapidly than with lactic acid alone, while the addition of the phenol in no way adds to the disagreeableness or painfulness of the local treatment. I have used the phenol in the following manner: The larynx is painted with 20 per cent. cocain, then the diseased tissue is thoroughly rubbed over with 25 per cent. lactic acid, followed immediately with 4 per cent. phenol (paramonochlor). The strength of both solutions is gradually increased as the patient can bear it, until at the end of the second or third week the lactic acid is being used pure and the phenol in 10 per cent. solution; stronger solutions I have not tried. This is continued once or twice a week, or at longer intervals, according to the conditions present, and kept up as long as needed. It is needless to say that the earlier treatment can be begun the better the results. Curettement, if needed, should be done first. I will now very briefly report a number of cases in which I have used the remedy, in most of which I have been pleased with its action.

*Case 1.*—T. H. General and laryngeal tuberculosis. Cords thickened; edges eroded, almost like saw-teeth; granulations in the interarytenoid space cauliflower like; voice absolutely gone. Removed the granulations with Krause double laryngeal curette, and applied lactic acid and phenol to all the tuberculous area. At the end of nine months the cords were smooth, the interarytenoid swelling was nearly gone, and the voice was nearly normal. Treatment is still occasionally given and the voice remains clear. So far as the laryngeal manifestations are concerned, he is practically cured.

*Case 2.*—A late stage of general and laryngeal tuberculosis; hopeless from the first. There was general laryngeal infiltration, with ulceration on the cords and of the arytenoids. Here treatment contributed to his comfort and improved the voice as long as he was able to come for treatment. He had to give up the treatment, and succumbed to the disease. As long as he was able to have the local treatment he always maintained that it did him good, although there was so much tumefaction and infiltration as to preclude the possibility of any local treatment doing much good.

*Case 3.*—Early stage of interarytenoid granulations with slight involvement of right apex. Lactic acid and phenol were administered in the manner described. After three months' treatment the voice is now clear and patient can sing; granulations are all gone.

*Case 4.*—Interarytenoid granulations with pulmonary involvement. Patient came for treatment for hoarse voice. After four months' treatment the granulations have disappeared and the voice is clear. Patient still has an occasional treatment.

*Case 5.*—Ulceration of left cord at vocal process with tumefaction of false cords; hoarse voice. Patient is still under treatment; is already, at the end of two months, greatly improved.

*Case 6.*—Interarytenoid ulceration with tumefaction of both false cords; great general involvement. Contrary to expectation, patient is better in every way. The voice came back after about six months' treatment, and though not entirely clear, is nearly so. At the beginning it was entirely gone. The ulcerations have healed, but the infiltration of the false cords has not disappeared entirely. Compared with former conditions there is great improvement.

*Case 7.*—Interarytenoid thickening without ulceration; voice hoarse, but not entirely gone. Under observation, with occasional treatment, for eighteen months; no pulmonary lesion could be discovered. Improves under treatment, but infiltration is still present though in a lessened degree. In cases of tumefaction and infiltration it does not do as much good as in the ulcerative, granulation forming variety.

*Case 8.*—Ulceration and erosion of cords and interarytenoid space, with constitutional involvement. After eight months' treatment the process in the larynx is at a standstill. The voice is still hoarse, as the cords were too much damaged to admit of complete repair. He is in fair condition, but will probably succumb to the pulmonary lesion sooner or later.

*Case 9.*—Late stage of general tuberculosis. Swallowing was difficult; great tumefaction of arytenoids, epiglottis and folds, while the voice was not very hoarse. Here treatment in no wise changed the course of events, but the swallowing was made much less difficult, and the local pain was much lessened. Treatment was continued up to a few weeks before death.

*Case 10.*—Granulation, probably tuberculous, on right cord near the vocal process. Constitutional signs were few, yet sufficient to render the diagnosis in all probability correct. Patient was under treatment some time for hoarseness, without any result. Removed as much of the granulation as possible with Schroetter forceps and then applied lactic acid and phenol at gradually increasing intervals. The hoarseness has now nearly gone, and he has even been able to sing a little. Applications are now made about once in three weeks. Even in cases of apparent cures I have kept up the treatment for some time thereafter.

In nearly all the above the diagnosis was confirmed by repeated bacillar examinations. In only one can there be the slightest doubt as to the diagnosis, and this is the case without any pulmonary involvement, although I have always regarded it as laryngeal tuberculosis. The local treatment seems to me to have always done some good, and in a few cases the results have been surprisingly good. Even the late hopeless cases have seemed to improve, for a while at least, and have been only too glad to have the treatment continued as long as possible. That the phenol is a decided advantage and aid to the lactic acid is to me an assured fact. Several of the above cases were treated at first for a considerable time with lactic acid alone. When the phenol was added the improvement was always more pronounced and rapid. The phenol seems to me to go deeper than the acid. I now invariably use the two in conjunction and find they give the best results I would urge upon any one who may feel discouraged over the treatment of his cases of laryngeal tuberculosis, that, if he has not already done so, he try the use of paramonochlorophenol in conjunction with lactic acid. Cures may not occur, but life will be more bearable, the voice will improve, and even if the final end is the same, the comfort of the individual will have been increased. As physicians it is our duty and privilege to comfort where we can not cure.

NOTE.—Present condition (Feb. 20, 1899) of cases here recorded:

Case 1. Laryngeal manifestations remain in abeyance. Voice good. Is slowly succumbing to general tuberculosis. Case 3. Died of general tuberculosis. Voice remained clear and there was no recurrence of granulations in larynx. Case 4. In good condition so far as known. Case 5. Slight hoarseness. Not under treatment. Case 6. Under treatment. Voice fairly clear. Whole process under control. Case 7. Practically well. Appears for examination about once in three months. Case 8. Now living in a distant city. Writes that he is feeling well, voice quite clear and has not had to see a physician for several months. At work every day. Case 10. Apparently cured. Is seen once in two months.

DISCUSSION.

Dr. COULTER—Doubtless each one has his preferences in the matter of remedies for this condition, and I have mine, of course. I have used the formaldehyde solution in one or two cases, but with such unsatisfactory results that I have lately returned to my first love—guaiacol. But in the use of guaiacol I have pursued somewhat different lines than do most others. I use it in strengths varying from a 5 per cent, to a 100 per cent., just as strong a solution as the patient can stand without pain. The direct results of the application of the guaiacol are often miraculous. The healing of the ulcerations is usually very kindly and speedy. It will in many cases produce an anesthesia lasting for eighteen or twenty hours, and thus allow the patient to eat and sleep with much more comfort.

Dr. J. F. BARNHILL—I desire to speak a word favorable to the use of a new remedy in this disease. I have recently used orthoform in four cases, in all of which the remedy was useful in relieving the pain for many hours—much longer than after the use of any other remedy. My method is: 1, cleanse the

part thoroughly; 2, cocainize the parts; 3, dust thoroughly with the orthoform; and 4, spray with albolin to retain the powder.

Dr. MAYER—My experience with paramonochlorophenol alone has been unsatisfactory and I question how much improvement is due to the lactic acid or the paramonochlorophenol. Regarding the curette and operative procedures, there seem to be two objections on the part of those who have used this method. The first objection is that patients will not tolerate it and it opens a nidus for further infection. The second objection is that the results of operation in this country are by no means that of Krause and others. I have used absolute alcohol in these proliferative forms of laryngeal tuberculosis with very satisfactory results. I wish to endorse Dr. Barnhill's statement regarding orthoform. It has been a very satisfactory remedy in my hands in the few cases in which it was tried, and I believe that with it we have an added remedy of value to our armamentarium.

Dr. RICHARDS (in closing)—In reply to Dr. Mayer, I would say that I can not, of course, absolutely prove that my good results are not due to the lactic acid alone. In those cases of this group which were at first treated with lactic acid alone, the results did not seem as good as when the phenol was added. It in no sense adds to the difficulty of the treatment, and seems to do more good than lactic acid alone. I agree entirely with Dr. Colby and Dr. Mayer that local treatment should be continued as long as possible, inasmuch as it always gives relief. I do not favor curettage unless the larynx is fairly tolerant, as more harm than good may result. Only one of my cases was curetted, and this patient was quite tolerant of laryngeal interference. In this case the granulations removed were large enough for microscopic examination.

## THE ETIOLOGY OF PHTHISIS.

### A SUMMARY OF SCIENTIFIC POINTS INVOLVED IN CHURCHILL'S THEORY.

BY R. W. GARDNER.

NEW YORK CITY.

The animal system contains an essential constituent of the brain and nervous substance, of the blood discs, of the muscles, of the albuminoid compounds, of the spermatozoa, of the egg, in a word, of the most important part of the organism—a *phosphide* element which has not yet been completely analyzed or isolated as a chemic compound, which has been called by many different names, but which is now clearly recognized as distinct from the phosphatic element. The essential characteristic of this *phosphide* element is that the phosphorus is contained in it in a state of molecular combination with the other chemic principles, and is not yet oxidized, while in the phosphatic element, such as the phosphate of lime in the bones, it is completely oxidized. This phosphide element is, of all the materials of the system, the one which has the greatest affinity for oxygen, and seems to be in animals, one, if not the first, of the primordial initiators of vital activity. Its office is not only to become oxidized itself, but to promote intraorganic combustion and hence, very likely to initiate the molecular metamorphoses of most of the other proximate animal principles.

The decrease in the system of this phosphide element, either from excessive waste or from a deficiency in its reintegration, constitutes a distinct and special morbid condition of the whole system, to which Churchill gives the name "phosphology." This pathologic condition leads to a decrease of oxidation, consequently, of all organic metamorphoses and of all vital action, and is characterized by the whole series of symptoms which precede or accompany a numerous class of diseases, and which have vaguely been called "deficient or lowered vitality." When this decrease of the phosphide element attains a certain degree of intensity, the oxidizability of certain compounds in the system is so much diminished that they become incapable of sufficient combustion, either to proceed to a higher state of vitality, or to go through that process of disintegration which would lead to their excretion from the system. Under such circumstances these compounds constitute an abnormal material, consisting of incompletely developed bioplasm or proteic substance, variable in its composition, forming the different pathologic deposits known under the name of "tubercles," which are the anatomic characteristics of phthisis and scrofula.

The biochemic difference between phthisis and scrofula consists in a different degree of phosphology. In scrofula the phosphology is less than in phthisis, so that the exhaustion of the phosphide element in the bioplasm only takes place during a secondary or subsequent phase of its evolution. This theory of "phosphology" enables us to account for nearly all the phenomena hitherto met with in tubercular disease: Such are the morbid physiologic phenomena in the respiratory, circulatory, urinary and calorific functions; the elective preference shown by the tubercular deposit for different systems or organs; the affinity between tuberculosis, scrofula, spanemia and chlorosis; the antagonism between tuberculosis and cancer, and between tuberculosis and cyanosis; the prevalence of tuberculosis in certain classes of animals, and its rarity in others; the mode of action of the different etiologic causes which promote or produce, and of the different cosmic or organic conditions, which aggravate or interfere with and retard, tuberculosis and tuberculization.

The administration of an oxidizable and assimilable compound of phosphorus under certain determinate, pathologic and therapeutic conditions has the constant effect of preventing any fresh deposit of tubercular matter. Hence, we must conclude that this substance produces in the system some peculiar modification incompatible with the existence of the tubercular diathesis, or, in other terms, that it destroys some one of the essential conditions of this morbid state. If the existence of the tubercular diathesis is prevented by an increase of the oxidizable phosphorus in the system, we are naturally led to conclude that just as the want of iron in animals is the cause of spanemia, owing to a deficiency of the globulin in the blood globules, of which iron is an essential element, so the want of the phosphide element is one of the essential conditions, or, in other terms, a proximate cause of the tubercular diathesis.

But what other reasons are there that should induce us to admit that the initial stage of tuberculosis is the want in the system of the proximate organic principles containing phosphorus in an oxidizable condition? In the present state of our knowledge it can not be settled by chemic analysis; 1, because the best process hitherto known for isolating the phosphide principles, cerebrin, protagon or lecithin, and phosphoglyceric acid is complicated and uncertain; 2, because they can only be obtained in such small proportions that their quantitative analysis is difficult and uncertain; 3, because, even if a sufficient quantity of the proximate element itself be obtained, it has been found impossible hitherto to separate the phosphide principle from it without previously oxidizing it, or breaking it up. All the attempts hitherto made to adequately analyze the blood of consumptive patients for the determination of this point have failed. We must therefore seek for proofs of the theory of a phos-

phologic diathesis in a complete and exhaustive survey of the physiologic and pathologic bearings of tuberculosis. Among the half-understood, and often contradictory facts hitherto ascertained about the proximate principle, there are certain results which we may take as a starting point. The elements of which living bodies consist are all primitively derived from inorganic matter. But at first sight they may be divided into two great classes. The first class is composed of compounds made up of the elements, carbon, hydrogen, oxygen and nitrogen, the elements which are common to all biologic or living compounds. The elements potassium, sodium, calcium, magnesium, chlorin, silicon, sulphur, iron and phosphorus are less uniformly present. Their sphere of action is much more limited; they seem chiefly intended, either by themselves or for the purpose of modifying—through their secondary combinations, whether saline or others, carbonates, phosphates, chlorids, etc.—the condition of the special proximate principles composed of the first four elements, and of varying their qualities and affinities according to the different combinations produced between the compounds of the first and those of the second class. This view has governed the chemistry of vegetable bodies, and has led to important applications in agriculture. The use of the saline compounds in vegetation has been established, and to a certain degree, elucidated.

For animal life the results obtained are not so far advanced. Liebig was the first to establish the fact that the elements of the latter class are the indispensable mediators of all functional action; that they are necessary to the assimilation of nutriment by the system; and that life can not be supported by any substance where they are absent.

We may, therefore, assume it to be an established fact that the changes which take place during life in the proper organic matter (compounds of carbon, oxygen, hydrogen and nitrogen) of living beings, are modified and regulated by the elements of the second class. Among these principles, some such as potassium, sodium, calcium, magnesium, the phosphates, carbonates, sulphates, chlorids, etc., are found in the system as proximate principles, that is to say, they either exist in the same form as in inorganic chemistry, or may be separate from their compounds without breaking them up and destroying their chemic composition. These may be called the immediate inorganic principles. There is, therefore, a fundamental difference between these two classes of biologic elements. The first always form saline combinations of the same type as in the mineral kingdon; the second often exist in the proximate principles in a molecular state. The first have no affinity for oxygen, either because such affinity is very weak or is already completely satisfied. These elements and their compounds, therefore, take no immediate share in the process of intraorganic oxidation, which is the primordial fact of all higher vitality, and are thus without any direct influence upon the primary molecular changes which flow therefrom. When their secondary part in the system is played out, they are excreted in the same chemic form as when fulfilling their functions, hence we may conclude that these functions are rather of a static than a dynamic character.

On the other hand, the substances comprised in the second class, the mediate biologic elements, have all three as much affinity for oxygen as the elements, carbon, hydrogen and nitrogen themselves, sometimes even more. Usually they are expelled from the system after their affinity for oxygen has been completely satisfied. Hence, we may reasonably conclude that, like the elements carbon, hydrogen and nitrogen, their function is rather dynamic than static, and that like these elements, they bear some direct and immediate relation to the initial phenomenon of all vitality—oxidation. Now, as oxidation is the primordial phenomenon of vitality, as there is no function, no act of living beings in which this chemic process is not either directly or indirectly concerned, we shall not be overstepping the limits of scientific induction by concluding that the importance of the constituent elements of the system is in direct proportion to the strength of their affinity for oxygen. If we examine the different oxidizable elements contained in the animal system, we see that their affinity for oxygen varies very much. They may be ranged in the following manner according to their increasing affinity for oxygen—nitrogen, hydrogen, carbon, sulphur, iron and phosphorus.

Another consideration of equal importance with their tendency to combine with oxygen is their power of producing heat. Heat is both a result and a constant condition of all the molecular actions which take place in living beings, and above all in animals. Here, however, we find that the power these bodies have of developing heat by combining with oxygen does not follow the same scale as their affinity for it. If we class the combustible elements of the system according to their heat equivalent, that is to say, according to the quantity of water which they can raise one degree in temperature by combining with the same quantity of oxygen, we shall find that they rank in the following order—phosphorus 36.072, hydrogen 33.808, iron 33.072, carbon 23.696, sulphur 17.660. So that, among all the oxidizable elements of the system, phosphorus is the one that possesses the highest heat equivalent, and consequently, whose reaction upon a given quantity of oxygen will raise highest the temperature of the combining bodies.

We are thus justified in inferring that of all the proximate principles in the animal system, those which contain the phosphide element must have the greatest affinity for oxygen and the greatest calorific capacity, and that they must influence more powerfully than any other compounds the two primary physical and chemic conditions of animal life, particularly among the warm-blooded animals: intraorganic combustion and the production of heat. If we look further, we shall be immediately struck with this fact: the phosphide element is especially met with in all tissues and organs whose office it is to initiate vital action. It is found in the nervous and muscular substance, which initiates intellectual or animal activity; in the globules of the blood, whose function it is to enable the external atmospheric medium to react, through them as a vehicle, upon the inmost recesses of the organism; in the primary metamorphic substances, albumin, fibrin, etc., which constitute the substratum, the *nidus formativus*, the blastema or protoplasm of all the tissues, and which, by their molecular actions of integration or disintegration, supply the materials of every vital act; lastly, it is met with in spermatic matter and in the egg, which affords the most characteristic manifestation of all vitality—the production of a new being.

If the bacillus of tuberculosis depends for its deadly effectiveness on a decrease in the system of a combus-

tible and calorific element, such as oxidizable phosphorus, it follows that in this disease there must be a decrease of general oxidation, and a lowering of animal temperature. That this is the case has been established. The same fact is proved by the aspect of the blood. It has long been a matter of observation by physicians, that the venous blood of consumptives is redder than in the normal condition. Now, we know that the black color of venous blood depends upon the presence of carbonic acid. Experiments on the glands and muscles have shown that the blackness of venous blood is owing to its having already been employed in molecular metamorphosis; that the blackness is in proportion to the intensity of this molecular action, and that it increases with this intensity. The use of the hypophosphite darkens the color of the venous blood, not only up to, but beyond its natural tint. The fact of diminished oxidation is also shown by the deposit in the urine of consumptive patients showing an excess of uric acid, with a corresponding decrease of urea. These urinary sediments usually diminish or disappear under the use of the hypophosphite. That this is due to an increase of oxidation will be apparent by comparing the formula of uric acid with that of urea.

The hypothesis agrees equally well with the anatomic as with the physiologic facts of tuberculosis. If the bioplasmic or proteic substances are incompletely oxidized, and insufficiently so to either obtain a higher degree of organization or to be excreted, they will be deposited in the tissues and, so to speak, precipitated, like the decomposed elements of a saline solution, in the form of amorphous or incompletely organized material. The more important share any organ takes in the process of oxidation, the more liable will it be to this deposit of tubercular matter. If, as is now generally admitted, that part of the respiratory process which takes place in the lungs consists in oxidation of at least a portion of the combustible substances in the blood, it is evident that this chemic change will first be undergone by those which have the greatest affinity for oxygen. The proximate principles containing the phosphide elements must thus be the first to undergo this process; and if, owing to their deficiency in their characteristic element, phosphorus, this oxidation is insufficient, it is evident that the deposit resulting from this incomplete process ought to appear first of all in the lung. Out of 1136 cases of tuberculosis examined by Papavoine, the deposit was in the lungs in 1030. Wherever the function of oxidation is more active, that will be the chief place for the deposit of tubercular matter. In ordinary respiration it is the upper portion of the lung—the apex or top—which comes most into play; the lower portion only does so during forced inspiration. The tubercular deposit ought therefore to be more abundant at the top of the lung than in the rest. This is exactly what has been shown to be the case. Louis has shown that out of 123 cases of phthisis, the tubercles were more numerous, larger, and more advanced in their development at the apex than at the base in 121 cases; and Heusinger found that in birds this was the preferential seat of the deposit.

Besides the oxidation which takes place in the lungs and in the tissues, there is a secondary system of circulation, whose office it is to take up the elements which have not completely fulfilled their biologic evolution, to subject them to a new elaboration, and to return them into the general circulation, so that they may a second time co-operate in the general nutrition of the organism. This is the lymphatic system, the essential components of which are two kinds of organs; vessels and glands, the former serving to convey the substances absorbed, the latter to subject them to a new elaboration before they are returned into the circulation. The object of this is probably to complete the oxidation of material which has not already fully undergone that process, either in the lungs or the capillaries. Each lymphatic gland may therefore be looked upon as a small supplementary kind of lung, intended to complete the oxidation of the less oxidizable substances of the system, which require to be placed for a longer time in contact with oxygen to finish their organic evolution. The proof of this is, that the glands consist of a cortical substance composed of a fine network of afferent vessels and arterial capillaries, where the absorbed matters come in contact with oxygenated blood, after which they enter the substance of the gland, and are conveyed toward the general circulatory system; the object of this arrangement must be the oxidation of the bioplasm contained in the gland.

Now this will only take place provided the substances to be oxidized have a certain degree of affinity for oxygen. If we admit the existence of a phosphide principle, not only oxidizable itself, but capable of communicating its combustibility to other substances, it is easy to understand how the deficiency of this principle will produce here, as in the lungs, incomplete oxidation—that is, an arrest of development, the formation of incompletely elaborated material—in a word, tubercular matter. The physiologic function of these organs thus shows, upon the theory of phosphology, why, next to the lungs, the lymphatic glands are the organs most prone to tuberculization. This is especially the case with the glands of the mesentery and of the intestine.

If the phosphologic diathesis be the cause of the production of tubercle, the tubercular matter must vary, to a certain extent, in its composition and appearances, because both of these will depend upon two conditions—the degree of deficiency of the phosphide element, and the nature of the materials from which it has been derived by a process of insufficient oxidation. This affords a satisfactory explanation of the varied forms presented by tubercular and scrofulous deposits. Tubercular matter is bioplasmic albuminoid substance, imperfectly developed on account of its having undergone incomplete oxidation, not because there is a deficiency of oxygen, but because the materials themselves have lost their affinity for it, in consequence of a decrease of the phosphide element.

If this theory be correct, it ought to be confirmed by the elementary chemic analysis of tubercular matter. The chemic analysis of tubercular matter, as well as of the blood, in phthisis, is incompetent to decide whether there really be or not a decrease in the phosphide element; but what it does show is that tubercular matter is a bioplasmic or proteic substance, from which a certain but variable number of atoms of carbon, hydrogen and oxygen have been subtracted. If we take as the composition of protein the formula abopted by Liebig, $C_{48}H_{36}N_6O_{14}$, we shall find that the results given by Scherer's analysis of tubercle in different organs prove that these really are a residue of oxidized proteic or albuminoid materials, and singularly confirm the explanations given above, by show-

ing that the tubercular matter in the lungs contained a less quantity of carbon and hydrogen, that is, had undergone a greater amount of oxidation, than the tubercular matter found in other organs. The formulæ found by Scherer for tubercle were—in the lungs, $C_{42}H_{35}N_6O_{13}$, in the liver, $C_{45}H_{36}N_6O_{13}$, in the peritoneum, $C_{46}H_{36}N_6O_{12}$, in the brain, $C_{46}H_{37}N_6O_{12}$, in the mesentery, $C_{46}H_{88}N_6O_{12}$. We thus see why tubercles in the different organs present, not only a difference in chemic composition, but also varying histologic forms, although retaining, particularly to the naked eye, a common and uniform aspect.

The theory of "phosphology" assumes that some of the proximate phosphorous principles in the system are deficient in the phosphide element which constitutes their essential characteristic. Although chemic analysis has hitherto been unable directly to decide this question, it is a singular fact that all analyses yet made which bear upon the point coincide in confirming the theory. Frick found, on analyzing the blood in four tuberculous cases in the first stage, that there was a notable diminution of its inorganic elements. In these analyses, the phosphide and phosphatic elements were confounded together, and calculated after oxidation as phosphates. He found that in 1000 parts of tubercular blood, the maximum of these phosphates was 0.351, the minimum was 0.197, the mean 0.291, while the mean in the normal condition was 0.874. What reason is there to suppose that this want of oxidizability depends upon a deficiency of the phosphide element, rather than upon any other modification, which may have diminished the affinity for oxygen of the different albuminoid compounds? The reasons are the following: 1, it is a fact that an oxidizable phosphorus-element exists in the albuminoid principles; 2, this element must be the most oxidizable part of them; 3, a preparation of phosphorus, which is both assimilable and oxidizable—the hypophosphite—has a constant action against tuberculosis.

Another class of facts confirm this view. In the herbivora, phthisis is much more common than in flesh-eating animals. The latter finds the phosphide element already formed in their food; the former do not, because the phosphide element does not exist in vegetables, so that as their blood contains a smaller quantity of phosphorus compounds, they must be much more liable to experience the want of them. This is not only true of mammiferous animals, but holds equally good in birds. It has been shown that in birds of prey, which live upon flesh, tubercles are hardly ever met with, either in the lungs or elsewhere, while they are common in other classes of birds. The theory of "phosphology" gives the key to several clinical phenomena which have hitherto been unexplained. A portion at least of the phosphates excreted from the system must proceed from the combustion of the oxidizable phosphorus elements, so that, when there is no change of diet, we may conclude that there will be a relative proportion between the amount of excreted phosphates and the waste of oxidizable phosphorus. If such be the case, we may expect to see phthisis developed whenever there is a permanent increase in the amount of phosphates excreted. Clinical observation shows that such is really the case, and the coincidence between tuberculosis and the increase of the phosphatic urinary excretion has been fully established. The phosphatic excretion is greatly increased during attacks of insanity, and a large proportion of the insane do, in fact, fall victims to phthisis. The proximate principles containing the phosphide element are chiefly met with in the nervous substance, and it has been established by the researches of a number of experimenters that there is a direct connection between the amount of phosphates excreted in the urine and cerebral or nervous wear and tear. The excessive phosphatic secretion prevailing in phthisis has been found to decrease during an improvement in the condition of consumptives.

In the former part of this paper it is stated that: "The administration of an oxidizable and assimilable compound of phosphorus under certain determinate *pathologic* and *therapeutic* conditions, has the constant effect of preventing any fresh deposit of tubercular matter." This statement has been made advisedly; unless these determinate conditions are carefully considered and followed, the hoped-for success in the treatment will not be experienced. There are many conditions, pathologic, therapeutic and pharmaceutic, which must be observed by the practitioner, if he would meet the success which is possible in the treatment of tuberculosis.

The diagnosis of the disease must be very carefully carried out in detail, that the appropriate hypophosphite salt indicated by the condition, may be selected. In the ordinary treatment usually followed, it has only been considered necessary to diagnose the main fact of the character of the disease, without carefully studying its varied manifestations in detail. The treatment is prescribed in a general way, a fixed general routine is advised, and the disease being chronic, it is not considered necessary that the patient should report frequently; and often weeks elapse, during which time he is not under the observation of his medical adviser. But if the hypophosphites are scientifically employed these conditions must be investigated; the patient must be carefully watched by his physicians; the doses of the particularly indicated hypophosphite should be carefully graded to meet the immediate condition of the patient, as hypophosphites in overdoses produce toxic effects on tuberculous patients; these doses should be varied from day to day, according to results produced; contraindicated hypophosphite salts and combinations of different hypophosphites must not be employed; anodynes, narcotics, stimulants, cod-liver oil and other special remedies designed to ameliorate certain prominent symptoms, such as coughs, night-sweats, etc., must be abandoned, as they operate against the object sought to be attained by the hypophosphite treatment; some of them—cod-liver oil and stimulants—prevent oxidation in the tissues: others produce prostration and congestion, and while they may appear to relieve for the time being some of the more prominent symptoms, their after-effects are injurious to the patient, while exerting no action against tuberculosis warranting their use; accidental complications—bronchitis, laryngitis, etc.—when present should be treated alone, by the usual remedies, until the acute stage is passed, the hypophosphite being in the meantime suspended; in the absence of complications, the indicated hypophosphite should be given, with occasional suspension of a few days at a time, in proper discriminative doses, until the diathesis is removed, and thereafter, occasionally as a prophylactic, as often as indications show any signs of a return of the diathesis.

The hypophosphites of soda, lime, and occasionally quinin, are alone to be employed; these should never

be administered in combination, as their therapeutic action differs; as the use of either the lime or soda salt depends upon certain conditions of expectoration and other conditions, they should be alternated according to effect desired; the basis of the hypophosphites of potassium, iron, manganese, etc., are contraindicated therapeutically, their use producing various pathogenic symptoms, such as hemorrhage, rapid sloughing of tubercular deposit, and other dangerous effects; the further advanced the case, the more careful should the prescriber be to keep the dose within the sphere of its physiologic action, as advanced cases are very much more susceptible to overdosing than those in the incipient stage.

The neglect of the profession to give proper attention to pharmaceutic requirements, is one of the principal causes of failure. The hypophosphites of soda and lime should each be specially prepared in strict accord with the recommendations of Churchill—be chemically pure, of neutral reaction, and in other respects made to conform with his views, and as soon as so prepared, should be at once protected against atmospheric oxidation by a chemically pure syrup. The syrup is not used to render the preparation palatable, for there is scarcely any taste to these salts when pure, but as an indispensable requirement to preserve the perfected salts in proper condition for medication. These have been in the past, and are now, the only reasons why hypophosphites are not constantly successful in this disease. The consideration of these conditions would make a long article by itself, and can not be exhaustively treated of here.

It is a remarkable fact that so many physicians appear to ignore nearly all the foregoing indispensable conditions as laid down by Churchill; they appear to think that anything called a hypophosphite, no matter how impure; any complex combination of different hypophosphites, no matter how antagonistic their action may be, will meet the constantly varying conditions of the patient; if hemorrhages are produced they are attributed to the inevitable progress of the disease, not to indiscriminate dosing, which is oftenest the real cause; no attention is paid to the special indications of each hypophosphite, to the scientific adaptation of the one suitable remedy to the particular morbid state; these facts are so largely overlooked that it is an exceptional case where they are observed; that this is true is shown by the common practice of prescribing indiscriminate and therapeutically contraindicated combinations of half a dozen hypophosphites, upon all occasions, for every purpose and in enormously excessive doses.

These considerations show why the treatment of phthisis with the hypophosphites meets with constant failure; why they have been so frequently discarded as useless after a futile trial. Unless a physician is willing to make a study of the scientific application of these remedies in this disease and carefully follow them, and insist upon prescribing only suitable preparations of them, he can not expect to meet with success. Under such conditions, the fault is not that the Churchill theory is not sound nor that hypophosphites are not proper remedies for the disease, but simply that the treatment has not been properly carried out.

156 William Street.

**Methylene Blue in Acute Articular Rheumatism.**—Lemoine asserts that methylene blue is more rapid and effective in acute articular rheumatism than sodium salicylate, especially in gonorrheal rheumatism.—*Bull. de l'Acad. de Med.*, January 31.

## VOLUNTARY LATERAL NYSTAGMUS.

### REPORT OF A CASE.

Presented to the Chicago Ophthalmological and Otological Society, December, 1896.

BY WILLIAM E. GAMBLE, M.D.

Lecturer on Ophthalmology and Otology, College of Physicians and Surgeons, Chicago, Medical Department, University of Illinois; Assistant Surgeon Illinois Charitable Eye and Ear Infirmary.

CHICAGO.

A. D., age 24, German-American, a medical student, has been a student and teacher all his life; has not been sick since childhood; had no severe illness during that period. He did not have scarlet fever nor diphtheria, and has never had diseases of the eyes of any kind.

While attending high school at about the age of 15 years, he first discovered that he could produce at will lateral nystagmus, and afterward often amused his classmates by his optical gymnastics. It was never involuntary. He has never experienced any difficulty in starting the eyes going but can continue the movement less than a minute, as the muscles become exhausted. He can not produce it in one eye alone. Nystagmus is most pronounced when fixing the eyes on an object six to eight feet distant, directly in front, but can continue at less rapidity when the eyes are making the lateral excursion. The movements are more pronounced by daylight than by artificial light. The rapidity of movement is as great as I have ever seen in cases of nystagmus. V. each eye = 20/20.

He does not suffer from headache nor eye-strain by continued study. He is not subject to headache of any kind. He accepts R. E. Cyl. .50 D, axis 180= 20/20+2. L. E. Sph. .25 D.=20/20+1. There is no opacity of cornea nor other media. Field of vision is normal, color sense is normal, and fundi are normal in appearance. He has never had writers' palsy nor other manifestation of neurotic disease. He has never worked in mines nor lived in a mountainous country.

The case is unique on account of its great rarity. Dr. Noyes, however, in his "Diseases of the Eye," edition of 1890, says that he has seen but one case of voluntary nystagmus, the patient having acquired this movement after having been confined to his room for some weeks, for eye trouble. This case of Dr. Noyes is the only case I have seen reported. There is scarcely any literature upon the subject, and I have not yet seen any explanation offered accounting for the phenomenon. In this case there is no new movement acquired differing from the normal lateral movements of the eyes, save that there is greater rapidity of motion. Why this man possesses this rare faculty, while millions of his fellows do not, is a problem for speculation.

There is evidently no pathology here. There is no want of cortical innervation of extraocular muscles, rather a temporary increased amount of it. Opacities of the cornea or of other refractive media of eyes, when occurring in early childhood, may produce nystagmus proper, volition being the only cause in this case.

100 State Street.

**Artificial Serum in Cholera.**—Cox of Shanghai reports that he saved the life of a cholera patient by making an intravenous injection at the rate of 30 c.c. a minute at a pressure of 75 cm., continuing for four hours, until all the symptoms of collapse had entirely disappeared.—*Semaine Méd.*, February 8.

# SOCIETY PROCEEDINGS.

## Chicago Gynecological Society.

*Regular Meeting, Feb. 17, 1899.*

Dr. NICHOLAS SENN, the president of the Society, occupied the chair.

Dr. FRANKLIN H. MARTIN reported a case of a

UTERUS CONTAINING MULTIPLE FIBROIDS

there being attached to it a tubo-ovarian cyst of the left side and a tubo-ovarian cyst of the right side. The pathology of the appendages was undoubtedly caused by infection extending by way of the mucous membrane of the uterus. There was a history of at least two attacks of localized peritonitis. The appendages were adherent at several points, but were easily enucleated. As pelvic pain and exhaustive uterine hemorrhages constituted the principal symptomatology, an operation which would insure subsidence of hemorrhage was desirable. He therefore removed the uterus at the cervix, as well as the appendages, because the former contained in its walls several fibromyomatous centers, all which he could not remove as safely, if at all, by myomectomy as by a hysterectomy. He presented a sketch illustrating the specimen as it appeared when fresh.

*Case 1.*—Mrs. M., aged 62 years, was brought to his clinic early in January, 1899. For a year she had been having uterine hemorrhages from time to time, and recently had become exhausted. The patient was found to have a large heart, urine of small specific gravity with hyaline and granular casts, and with about one-third the normal amount of urea. He placed her upon a non-nitrogenous diet, flushed her kidneys by running her urine by means of water and diuretics up to 75 ounces a day, obtained free catharsis and skin action, and then, under ether anesthesia, made a thorough bimanual examination, curetted the uterus for diagnostic as well as curative purposes, and packed the cavity with gauze. The product of the curettement, examined microscopically, showed adenocarcinoma. On bimanual palpation, the uterus was found globular in shape and about three inches in diameter. The cervix was practically obliterated. While no extension of the disease could be traced from the uterus, the organ was fixed at its attachment to the senile, atrophied vagina. On account of the extreme weakness of the patient, the large overworked heart, the interstitial nephritis, and Dr. Martin's inability to reach the case any other way, as the curettement had failed to relieve the hemorrhage, he performed a panhysterectomy by laparotomy, and did it in the shortest possible time consistent with complete work. The patient is convalescing rapidly.

*Case 2.*—In 1895 he operated upon Mrs. M. for double pyosalpinx and metritis which had resulted in extensive peritoneal adhesions. The operation was double salpingectomy, oöphorectomy and hysterectomy performed through an abdominal incision. The patient recovered promptly, and had been in excellent health until about six months ago, when she began to complain of weight in the right side, and shortly afterward she discovered a tumor to the right of the umbilicus. She was again referred to him by her family physician. On examination he found a tumor of irregular outlines, with elastic walls, giving a sense of fluctuation, about eight inches in length and four inches in the other two diameters. It could be pushed to the umbilicus toward the left, to the crest of the ilium below, and would make a circle the axis of which might be estimated at about eight inches, and the end of which was the right kidney space. The tumor would readily occupy the right kidney space. The left kidney was not palpable. From percussion over the tumor, when placed in the loin, marked tympany was observed. By means of the Harris bladder device, employed for thirty minutes, the left side of the bladder yielded seven drams of urine, and the right side not one minim. Kelly's cystoscope, which was also employed without an anesthetic, showed the mouth of the ureters widely separated, therefore an anomalous condition of the ureters could not account for the showing of the ingenious device. No attempt at catheterization of the ureters was made.

Examination of the urine of the left kidney demonstrated that that organ was doing well the work of both kidneys. Thirty-six ounces of urine a day was secreted, and the amount of urea, 300 grams, on a hospital diet. The urine was increased by drinks and diuretics, and elimination from bowels and skin insured by proper methods. His diagnosis was cyst of the right kidney, probably retention from obstruction of the ureter, possibly adenocystoma.

He decided upon a post-peritoneal exploration, and accordingly, Feb. 2, 1899, he explored and removed the specimen which he exhibited, through a lumbar incision. Upon reaching the kidney and separating it from the surrounding fat for a considerable space, he made a small incision in it from which all the fluid from what seemed a group of small cysts immediately escaped, leaving nothing but their membranous walls remaining. It was readily seen that the normal secreting power of this kidney had been destroyed by long pressure from the retained fluids. He therefore did not attempt to repair the obstructed ureter, as advised by Fenger, Senn, and others, when a small portion of the cortex still remained, with hope of revivifying the functionless organ, but tied off the vessels and ureter and removed the organ. The patient rapidly recuperated from the operation.

Dr. Zeit, in his report of the specimen, states that the cystic kidney is one of hydronephrosis due to occlusion of the ureter in some way. The secreting power of the kidney had been destroyed. The fluid of the cyst contained no trace of urea. The atrophy of the secreting portion of the kidney was so complete that drainage or restoration of its ureter would not have succeeded in producing regeneration of the cortical portion.

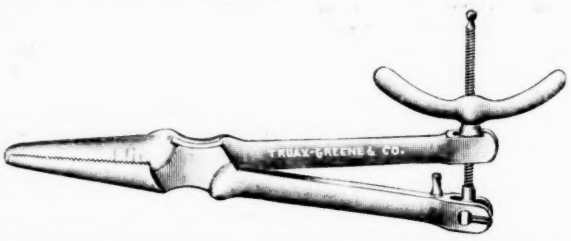
Dr. Martin believes that the right ureter was injured by the disease for which he operated in 1895, or possibly by the operation itself, which demanded extensive enucleation in removing the impacted appendages.

Dr. HENRY P. NEWMAN read

A PRELIMINARY REPORT UPON THE USE OF THE DOYEN THUMIN CRUSHER OR CLAMP; WITH A NEW INSTRUMENT FOR EXTENDING ITS WORK UPON THE BROAD LIGAMENTS AND OTHER SOFT STRUCTURES.

The object of the Doyen method of hysterectomy, for which latter procedure it was primarily used, was to do away with all suture material or sutures, and likewise the retention clamp, the author claiming facility of use, promptness of execution, and perfect security from after-hemorrhage. The clinical experience of Doyen, as well as that of Landau, would seem to verify these claims.

The instrument here presented is a Thumin modification of the original Doyen crusher or clamp. It has a large bite with serrated edges and a central groove. After its application to the parts, the powerful leverage obtained through the handles by the cross-bar and thumb-screw enable one to compress or crush the tissues into an almost ribbon-like thinness. The groove in the center of the bite allows of the formation of a blood-clot or thrombus in the individual vessels compressed, in addition to the natural formed thrombus, as in ligation, behind the constricted or crushed vessels. The crushing on the outside of the groove or on the distal end of the excised vessel may be compared to a second or double ligature.




As the instrument is only applied for two and a half minutes, it is claimed that much of the vitality of the crushed tissue is restored; and the consequent sloughing of the retention-clamp method or ligatures is done away with, likewise the granulating surface often so prejudicial to pelvic and abdominal work. The verification of the latter proposition Dr. Newman regards as of great importance, and has instituted a series of experiments upon the lower animals with this purpose in view:

1. To observe the immediate condition resulting from clamping or crushing soft tissues within and without closed cavities.
2. The subsequent conditions of the stump or tissue, including the nutritive and reparative processes that take place.

It will be seen by the following cases that he has purposed extending its use to any and all tissues, intraperitoneal and extraperitoneal, wherever its applicability seems to warrant. For this purpose he has devised a new modified instrument with longer blades and narrower jaws, a removable lock for not only its antiseptic advantages, but for the separate introduction of its blades, when necessary. It also has a slight projection upon the end of one blade, preventing the broad ligament, large pedicle, or any tissue from projecting beyond the bite of the blades.

*Case 1.*—Mrs. E., aged 20 years, American; family history good. She menstruated first at the age of 13, never regularly has backache and pain over right ovarian region, which is increased at menstrual period. She has been married one and

a half years. Menses have been more painful and backache and pain in the right ovarian region more severe, since marriage. Examination showed the uterus to be infantile, cervix small, elongated and eroded; ovaries large and prolapsed and this enlargement and prolapse more marked in right ovary.

*Operation*—Jan. 21, 1899. Curettement; tracheloplasty; celiotomy; right ovary found low in cul-de-sac of twice normal size, with cystic degeneration, tube closed, enlarged and thickened; adhesions broken up and ovary and tube removed by means of Doyen-Thumin crusher; left ovary slightly enlarged and cystic; tube closed and many small cysts around the extremity; section of cystic ovary removed; tube opened and ampulla everted and held by fine catgut, cysts tied off with catgut; recovery good; no evidences of hemorrhage from ovarian stump.

*Case 2.*—Mrs. D., aged 62, German; history of previous illness negative; family history good, except that mother died of tuberculosis. She menstruated first at 15; was regular until the age of 53, when menses ceased abruptly; no history of irregularity, excessive flow or pain. She was married at the age of 20; husband is living; she has nine children, whose ages range from 40 to 20. Seven years ago she began to have pain in the back, at intervals; no other symptoms until one year ago, in January, when she began to have discharge and hemorrhage; hemorrhage irregular, at times a show of blood, then absent, then a flow for a considerable time, two, three, four or five weeks. During the past year patient has become anemic and has lost not a little flesh and strength. Examination revealed tumor (enlarged uterus) in pelvis, extending two and a half inches above pubic bone, hard and nodular. Diagnosis: carcinoma of uterus, and probable long-standing multiple fibroids.

*Operation.*—Jan. 20, 1899. The vaginal route was chosen, although the vagina was somewhat small, and the uterus thrice its normal size. The outlet was enlarged by bilateral incisions. Incisions were made anterior and posterior to the cervix, into peritoneal cavity; left uterine artery severed and tied; effort made to pull uterus down, but impossible on account of size, friability and adhesions; abdomen opened and uterus freed; Doyen-Thumin crusher placed upon the broad ligament from above downward, compressed and left two and a half minutes. Ligament cut on uterine side of clamp; clamp loosened; no oozing; clamp placed on opposite ligament, and this similarly dealt with; uterus, now free, was lifted out and abdomen closed; gauze drainage through the vagina; recovery; no after-hemorrhage; only slight serosanguineous oozing from the vagina.

*Case 3.*—Mrs. F., aged 24, English. Patient has always been well, except for a monthly hemorrhage from nose each time, lasting about twenty-four hours. This phenomenon first appeared when patient was 6 years of age, and lasted until she was 12. Her mother died of child-birth. Menses first appeared in the thirteenth year of patient's life, and continued regularly and without pain until first pregnancy. Since the birth of the first child they have been painful. She was married at the age of 15 years; has one child 8 years old; twins were born six and a half years ago, which lived six weeks; her husband died in 1864. History leading to present illness: Patient had laceration of cervix and probable infection, with first child, and has not been well since; symptoms increased after twins; had an operation four years ago—at first trachelorrhaphy, and two weeks later a double salpingo-oöphorectomy. Since then pains in the abdomen have increased rather than diminished. The bowels have been constipated and bladder irritable. Examination showed the uterus to be large and tender, and especially tender at the horns of the uterus in the old stumps, consequently a probable diagnosis of nephritis and intestinal salpingitis of the remaining portions of the tubes.

*Operation.*—Jan. 26, 1899. Vaginal hysterectomy. The usual incision was made around the cervix, and the uterus freed anteriorly and posteriorly. The fundus was then turned forward and pulled downward, through the anterior incision. The Doyen-Thumin crusher was placed on the broad liagament from above downward and left the usual length of time; then the opposite ligament was treated in the same manner, which completed the operation; recovery. Relief of pain has been very marked. No hemorrhage followed operation. Suppuration was found in both horns of the uterus.

*Case 4.*—Mrs. S., aged 29, German-American. Patient has been a cloak-fitter for eight years; on her feet many hours each day; she is large and well developed; family history good. She first menstruated at the age of 14 years; and was regular until two years ago; suffered a great deal during first three years of menstrual life, then symptoms became less severe until seven years ago, since which time they have been growing worse. Patient has always had severe pain over lower half of abdomen during menstrual period, but during the last year this pain has been constant. The patient has also complained of severe pain in the chest over the cardiac region, without apparent local cause. Examination revealed stenosis of os uteri, a large uterus, movable mass to the right and above the uterus. The mass on the right of the uterus had undoubtedly been taken for floating kidney, as that diagnosis had been made by Chicago physicians. Operation: Curettement; tracheoplasty; celiotomy; left ovary found to be the size of a large hen's egg, cystic, and capsule much thickened, as seen in specimen. Tube and ovarian ligament were much thickened and elongated, allowing of considerable movement; ovary removed by means of crusher, leaving tube; right ovary was found to be the size of a hen's egg, cystic and degenerated, but to a less degree than the left; cyst of broad ligament the size of turkey's egg, situated above the ovary in such a way that the two gave the characteristic kidney shape; cyst removed and also section of this ovary; recovery; progressing well; no evidence of hemorrhage.

*Case 5.*—Mrs. H., aged 30, American. Previous history: Well until one year ago last Thanksgiving; family history good. She menstruated first at the age of fifteen; menses regular and painless until one year ago last November. She married at the age of 21; has only one child 8 years old; well after birth of child. Present illness: Friday morning, after Thanksgiving of 1897, she began to have headache and pain in the back. Friday night she began to vomit. Saturday morning she had pain in the right inguinal region. The pain and vomiting ceased in a few days, but patient did not leave her bed until the following March; pain and vomiting have occurred with each menstrual period since November, 1897. Examination revealed laceration of perineum, laceration of cervix, large prolapsed ovary on left side, prolapsed ovary on the right side; hard body the size of a hickory-nut in the region of the appendix. Operation Jan. 26, 1899; curettement, tracheloplasty, perineorrhaphy, celiotomy, appendectomy (the appendix having been doubled upon itself and adherent in such a way as to form the hard body in this region), section of right ovary removed, and on left side salpingo-oöphorectomy done with Doyen-Thumin instrument; recovery; no evidence of hemorrhage; patient very much improved in general appearance and symptoms.

*Case 6.*—Mrs. J., aged 53, Norwegian; previous history negative; family history good. She menstruated first at the age of 14 years, was always regular until last year of menstrual life; ceased to menstruate at the age of 48 years, five years ago. She married at the age of 21 years; has had seven children. Present illness: Abdomen began to enlarge one year ago; had a feeling of pressure in the left ovarian region; bowels constipated. Four or five months ago the patient began to notice a tumor on the left side. Examination revealed a cystic tumor of the size of a uterus at seven months of pregeancy. Operation Feb. 13, 1899: Removal of the tumor by means of Doyen-Thumin crusher for pedicle; recovery; no evidence of hemorrhage.

Dr. X. O. WERDER of Pittsburg, Pa., read a paper (by invitation) entitled

A CLINICAL CONTRIBUTION TO THE TREATMENT OF MALIGNANT TUMORS OF THE OVARY.

He emphasizes the importance of this condition, which deserves more attention from abdominal surgeons and the profession at large than is usually accorded it. To substantiate this view he quotes the statistics of the large continental clinics, showing its frequency. The following proportion of malignancy to other ovarian neoplasms removed by them is given by the operators named: Olshausen found 15 per cent.; Cohn's report of cases operated upon in Schroeder's clinic shows 16.4 per cent.; Fritsch had 18 per cent. and Leopold 23 per cent. of cases which were malignant histologically as well as clinically; while Kelly reports 8 per cent. malignancy in 138 cases operated upon by him. The author finds 15.3 per cent. malignancy (clinical evidence being confirmed by microscopic examination) in 130 patients, from whom one or more ovarian tumors were removed. Adding seven exploratory sections for this condition, 20.4 per cent. is reached. This does not represent his full percentage, however, for many other cases seen were manifestly inoperable. He does not concur in the views expressed by Cohn and others who claim that adenopapillomata should be classed with papillary carcinomata, and no such cases are included in the statistics given.

After quoting the views of Pfannenstiel, he says: "From a clinical point of view we must admit many points of resemblance between papillomatous tumors and typic carcinoma; in fact, their outward appearances are often so strikingly similar

that for their differentiation the aid of the microscope is required. They are both frequently accompanied by ascites; they are often bilateral, both are liable to become disseminated over extensive peritoneal surfaces in the form of cauliflower excrescences, and both may be accompanied by a degree of malnutrition and emaciation difficult to distinguish from true cachexia. Positive proof of the benign character of the simple adenopapillomata are the cases observed by all experienced surgeons, in which, in spite of numerous metastases found on the intestines and other portions of the peritoneal cavity, the operation was followed by a complete and permanent recovery. Genuine, malignant metastases preserve their destructive tendencies even after the removal of the mother tumor."

Regarding the frequency with which adenocarcinoma is associated with papilloma, there seems to be quite a discrepancy. Pfannenstiel found this relation in twenty out of forty-three cases. This frequency of association is not borne out by Kelly, who only found it in two out of twenty-seven cases.

Having shown the frequency of malignant ovarian tumors, their treatment—a matter of paramount importance—is taken up. He thinks the older men, whose influence created abdominal surgery and whose views dominated it and directed its course for many years, must have met with disastrous results in the operative treatment of these tumors, for they discourage it because "of the high mortality and the almost certain return of the disease; with them the diagnosis of malignancy was regarded as a distinct contradiction to operative treatment. With an improved operative technic and a general decrease of mortality attending abdominal operations, our views in regard to the operability of malignant tumors have also undergone a gradual but decisive change." This is attributed largely to Cohn's report of a hundred cases operated upon by Schroeder, which "demonstrated conclusively that these neoplasms can be removed with not only a comparatively small mortality, but also that the prognosis in point of recurrence is by no means so absolutely hopeless as we had been led to believe." The operative mortality of these one hundred cases was 20 per cent.; 15 per cent. soon succumbed after operation to the disease, but 19.5 per cent. were still living at the end of a year, and in five the cure was maintained for from three to four and a half years. Other operators, especially Fritsch and Leopold, soon followed with reports equally as good as Schroeder's. More recently Kratzenstein gives the results of a hundred cases of malignant tumors treated at the Universitäts-Frauen-Klinik in Berlin, between the years 1879–92, in which the subsequent course is known. The deaths from operation were 28 per cent.; of the seventy-two surviving patients, thirty-four died from recurrences of the disease, but 36 per cent. were cured, to use his own words, "not only for one year, but permanently."

What he understands by permanent cures is not explained; he cites, however, a number of cases in which carcinomatous tumors were removed, who lived at the end of from five to thirteen years. Certainly very encouraging results. If permitted to give his own experience, limited as it is compared with the statistics obtained from such large clinics, it will, nevertheless, in a small measure contribute to the study of this rather neglected subject. The mortality of the nineteen cases subjected to radical operation was 3 or 15.7 per cent., two deaths belonging to the group of carcinoma and one to that of sarcoma of the twelve recoveries; one has not been heard from since her discharge; two have died from the disease within three to four months; three within five or eight months; one died three years and four months, and one three years from recurrence, making a total of seven deaths from recurrence and one in doubt. Of the others, one, five months after operation, suffers from a recurrence; one is well one year and five months after operation; one, two years and nine months, and one, three years and seven months; there are, therefore, three who have survived the operation over three years and one almost three years. The four cases of sarcoma are all living and well at the present time. This again demonstrates the comparatively benign character of the ovarian sarcoma which has been pointed out by a number of observers. The reason of this is probably the absence of metastatic processes and the freedom of adhesions through which the disease is so easily propagated. Cohn says that sarcoma, so very malignant when affecting other organs, gives the best chances of all malignant tumors of the ovary. Olshausen confirms this and observes that it rarely causes metastases. L. Pick regards the prognosis of sarcoma of the ovary when bilateral as very unfavorable, but far better, even favorable, when confined to one side only. Kratzenstein also comments on the good results obtained in sarcoma, and states that fibrosarcoma never occurs; he therefore, doubts its malignancy.

"In the sight of the above statistics, Dr. Werder believes we may draw the conclusion that the results following the operative treatment of carcinoma of the ovary do not seem to justify the extremely pessimistic views, even now so generally entertained by abdominal surgeons. Even though complete cures may be the exception, the few years or even months of comfort and well being added to human life are well worth our best efforts in a disease so hopeless and destructive. Unless a previous examination shows extensive infiltration of the pelvis and distinct metastatic processes in the bladder, intestines and abdominal walls, an exploratory incision seems to me not only justifiable, but indicated, even when the diagnosis of malignant disease is no longer doubtful. In so doing the patient is relieved of a condition which is often more annoying and serious in its immediate effects than the disease itself, namely, the ascites, at the same time gaining information in regard to the nature of the tumor, its attachments, the extent of its metastases, which can not be obtained to the same degree in any other manner. If the tumor prove to be an operable one, that is, one in which a safe removal can be effected, he would not hesitate to do so, although a complete removal of all diseased structures would not seem probable, because thereby abdominal pressure is lessened and the ascites is checked, if not permanently, at least often for a considerable period. The patient rapidly recuperates and regains a fair degree of health, even in the most unfavorable cases. Freund goes even further: he recommends abdominal incision in clearly inoperative cases for the purpose of removing the ascitic fluid by carefully sponging and drying the abdominal cavity, and cites cases in which this apparently simple procedure permanently influenced the ascites and resulted in marked relief of all symptoms and a decided improvement of the general health. There is another reason why the tumor, when removal seems possible within reasonable limits of safety, should be enucleated, and this is the impossibility of knowing with certainty, in some cases at least, that the neoplasm is really malignant. Cases of adenopapilloma not rarely so strongly resemble carcinoma that differentiation from microscopic appearances alone is not always easy."

A very instructive case is cited to illustrate this point. Bilateral malignant ovarian tumors were diagnosed, and an exploratory section was made. The condition found appeared to be typic of carcinoma, the tumors being covered with friable, easily bleeding cauliflower masses, and such masses were found on contiguous structures. There was considerable ascites. The patient was cachectic and very feeble. The abdomen was closed and patient sent home to die. She was tapped thirteen times subsequently and again applied for treatment two years later. This time she was much stronger and in better condition in every respect. A few days later the abdomen was again opened. The cauliflower masses, so numerous before, had almost entirely disappeared. The tumors were extensively adherent, the left separating the layers of the mesocolon. The operation was unusually bloody, but complete enucleation with hysterectomy was effected. She made a good recovery and has since remained well, more than a year having elapsed. "Microscopic examination showed the tumor to be an adenopapilloma, with no evidence of malignant degeneration."

The question of operability of a tumor, even after opening the abdomen, can not always be determined without difficulty, especially when large and occupying the greater portion of the abdominal cavity. Our manipulations necessary to determine its attachments must not only be of the gentlest character, as these neoplasms are often unusually friable and vascular and do not permit any vigorous and rough handling, and many of them have a retroperitoneal or intraligamentous development in which the exact relation can not be determined, until much of the work of enucleation is already accomplished. If we wish to give the patient the benefit of the doubt, therefore, in doubtful cases, we can not avoid meeting with some disasters.

On account of this frequent intraligamentous and retroperitoneal development and the excessive vascularity and friability, so characteristic of these tumors, the operation is often exceedingly bloody and is apt to put the nerve of the operator and his skill in promptly dealing with emergencies to a very severe test. He has found it a good general rule when bleeding endangers the life of the patient to boldly grasp the tumor and deliver it wholly or piecemeal, it matters not, so as to be able to reach the main arteries, ovarian and uterine, which are temporarily clamped; the rest of the operation becomes then practically bloodless and can be completed without any undue haste. When hemorrhage, however, is not troublesome, it should be the aim to enucleate the tumor intact, without tapping or trying to decrease its size, in order to avoid contaminating the peritoneal cavity and introducing cancer elements which might in the course of time produce recurrences of the disease. A tabulated statement gives the author's twenty cases of completed operation in detail.

## Philadelphia County Medical Society.

*Meeting of Feb. 2, 1899.*

Dr. J. Madison Taylor presented a paper to the meeting on

HYPNOTISM.

He thought that a beneficial result had been obtained from its adoption as a therapeutic application. The best subjects were those who had been trained to obedience, as soldiers, and not hysteric people, as some had supposed. Hypnotism is indicated in some cases of the drug habit, in alcohol, and in selected patients subject to functional nervous diseases. In bringing about the hypnotic state he only desires that degree approaching drowsiness, rather than a more profound condition. While there was and still is a certain degree of mystery and confusion regarding hypnotism, the agency might prove of value to the profession, as demonstrated by a report of the following cases:

In an instance in which a young lady was subject to vasomotor disturbances, as manifested by cold hands and feet, Dr. Taylor had succeeded in rendering either hand hot or cold at will. As a test of the application in this case, he reversed the nature of the suggestion each time, only confirming the results first obtained. In another case in which the patient had been subject to multitudinous ailments treated by neurologists, and pronounced incurable by some, he had succeeded in inducing a condition which had made the patient able to live a life of usefulness, she being at the present time librarian of one of the larger hospitals of this city. In another case in which a young man was addicted to alcoholism, at times taking a prolonged debauch, seldom less than ten or twelve days, the Doctor had succeeded in cutting the drunken spell short after it had existed for only three days and while the patient was still in a semi-intoxicated condition. The speaker then presented a case before the Society in which a lady of middle age was made to fall into the hypnotic state simply at the bidding of the word "sleep" accompanied by a few strokes of the hand downward over the eyes and nose.

Dr. Charles K. Mills briefly referred to the general scope of the supposed science as it had developed, its application, and general utility. Hypnotism, he thought, was an agent which, while having possibly some slight value as a remedy in such conditions as functional nervous diseases, was yet a remedy around which hung many dangers. While, in his opinion, certain hysteric diseases might be for a time benefited by the employment of hypnotism, and while certain other functional disorders might be made to temporarily disappear under the influence of suggestion, he doubted whether organic diseases could ever be improved by this mode of treatment. Having a patient with normal mentality and a certain degree of will power, he doubted that any better results could be obtained than by words of wisdom and good counsel spoken while all the faculties were under full and complete control.

Dr. F. X. Dercum referred first to the mechanism of the production of hypnotism, its uses, and limitations. He thought the hypnotic state a condition allied to natural sleep; under the influence of the hypnotic state the neurons which, while having all the essential elements in contact during wakefulness, might become partially separated along certain pathways in the hypnotic state, and only certain pathways being separated, it thus accounted for the fact that all the faculties were not obtunded, and therefore, the person might be able to hear as well as to see. He regarded the subject of great importance to the medical profession from a scientific standpoint, but could not speak of having ever obtained any favorable results from its employment. In fact, he regarded it as a measure calculated to do great harm, especially if it was employed by those who did not fully comprehend every step they were taking. If one should ever hypnotize female patients they should never do so unless there were present as eye-witnesses several others of the same sex. He had found that many persons who had once been under this influence, would in the majority of instances crave for the same state again, frequently originating imaginary troubles and searching for the physician to such an extent as to become almost nuisances. In the treatment of organic diseases, and of the insane, he regarded hypnotism of no importance.

Dr. Charles W. Burr stated that from ancient times the subject of hypnotism has had its ups and downs, the latter being its condition at the present time. A remedy which had these periodic attacks, he thought, should be regarded with great suspicion. He had seen and heard of people who seemingly were devoid of cutaneous sensibility, and those people he thought too often feigned the condition when they were actually the subjects of general anesthesia. In one case of this kind that he had observed, the person was able to prick pins quite deeply into any portion of the body without manifesting any seeming displeasure or pain therefrom. He thought, too, that the predominant idea set before the physician making the application of hypnotism was to make the patient do or feel certain things, so that in many instances it might be a question whether the physician or the patient was the one under the hypnotic influence. In this way the report of many wonderful cures have been originated. He knew of at least one person whose business it was to search for persons who might be easily placed under this influence, or certain freaks, as had been reported in the first portion of his address, for the purpose of traveling with them over the country. He saw no practical use to be made of hypnotism.

Dr. A. A. Eshner thought that, like drugs, hypnotism might be used to good or bad advantage, depending upon the employer.

Prof. William R. Newbold, of the philosophic department of the University of Pennsylvania, stated that at the present time so much confusion existed regarding the subject of hypnotism that but little was definitely known. What we wanted, he thought, was the report of certain definite instances which gave definite results and the development of facts free from bias and not to be controverted. He denied that there was any such condition as the "hypnotic state," preferring to call that condition by more definite terms. If it was thought the term used by Dr. J. Madison Taylor was correct, that it was "impressions upon the inner consciousness," this was better than what is known as the hypnotic state. While there might be some good derived from the study of this subject, he thought at present it was involved in much mystery.

Dr. Orville Horwitz stated a case in which a member of a company of traveling hypnotists had been placed under what is known as the hypnotic state, and from whom he had removed tuberculous lymph glands of the inguinal region without pain.

Dr. H. A. Hare spoke of some experiments upon animals, which he and Dr. Edward Martin had made, in which the animals had been hypnotized, and he had subsequently dissected out the phrenic nerve and repeatedly handled the carotid sheath without evidence of having caused pain, and the animals, after the operation had been completed, had to be aroused by a series of sharp taps across the chest.

Dr. Judson Daland could see no permanent value to be derived from hypnotism, and thought that it should be condemned and made a crime punishable by law.

Dr. J. Madison Taylor, closing the discussion, stated that while others had derived dissimilar experiences from his own, he was sure that in some cases he had treated, much good had resulted from its employment, and he could only refer to the case reported in which a man was restored to usefulness after various neurologists had failed to give relief. While he had great respect for the opinion as expressed by others regarding this matter, he had not been converted, and he requested of those who had spoken in opposition to hypnotism, that when they had failed to get any substantial results he would take pleasure in having the cases referred to him.

Dr. H. A. Hare read a paper on "Some Differential Points Regarding Typhoid Fever, Pneumonia and Acute Tubercular Infection," which was discussed by Drs. J. P. Crozer Griffith, William E. Hughes and others.

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## College of Physicians, Philadelphia.

*Stated Meeting, February 21.*

Dr. G. Oram Ring reported, before the Section on Ophthalmology, "A Successful Iridocystectomy." In this operation the knife had been introduced about 3 mm. above the lower margin of the cornea about the center and passing upward. The iris was drawn down by means of the tear forceps and removed. The knife had been thrust into the vitreous, a portion escaping, and at the same time adhesions were broken. Good results had been obtained.

Dr. Ring also introduced an interesting case in which there was "Rupture of the Choroid with Mental Symptoms." In this patient the predominant symptom was that a black spot persisted in the field of vision, which so obscured the sight as to make life miserable, and to such an extent that monomania had supervened. He desired to know whether other members had noted such cases, as well as the prognosis.

Dr. G. E. de Schweinitz related a case which had some bearing on the one introduced by Dr. Ring. The patient first began to complain of a red light observed in one eye, and finally became of such a character as to react on the general nervous system, leading to monomania and insanity. Regarding the treatment, while some advocated the use of a curtain and removal of the eye, he had seen no permanent good results. He thought, as advocated by at least one foreign writer, that

some form of suggestion which might act upon the inner consciousness so as to divert the mind offers some hope of improvement.

Dr. SAMUEL D. RISLEY related a similar case to that described by Dr. de Schweinitz. The patient was a lady about middle life, who at first complained of the red light affecting one eye, accompanied by intense pain which he thought was not entirely imaginary, but real. The patient desired that immediate operation be performed, but his advice was to postpone it. The patient finally consulted another ophthalmologist, who removed the eye, although the vision was $^{20}/_{20}$. Regarding the proper treatment of these cases, it was the consensus of opinion that no form of treatment yet devised promised any beneficial results, from the fact that the trouble was of centric origin, for which local treatment did but little good.

Dr. DAVID RIESMAN exhibited a case of "Day Blindness." Regarding the etymology of the word "nyctalopia" he referred to many authorities who disagreed upon the correct term to be used as it applied to what is meant by day blindness, but adopting that of Green and De Schweinitz, nyctalopia was used.

The patient was a man, about 45 years of age, who denied all specific history. The symptoms of which he complained most were a cloudiness during the day, with a great degree of color-blindness. At night the vision was better and he could recognize persons across the street, which he could not do during the day. During the night he could distinguish colors quite readily at first, but after a few moments the colored lights would fade. A careful examination was made, and it was found that in the field of vision the red light extended considerably beyond that of the blue. The vision was $^{6}/_{18}$ and $^{6}/_{30}$.

On further examination it was found there was atrophy of the optic nerve. There were no symptoms of locomotor ataxia. The exact nature of the condition remained unknown, but it was thought by one speaker that it should be looked upon as belonging to the class of hysteria, as such frequently existed in women who suffered from this latter disease.

Dr. DE SCHWEINITZ read a paper on "Cured Sympathetic Iridocyclitis," and "Some Cases of Unusual Retinal and Choroidal Lesions." He spoke of a case in which a gentleman, three months before, had been injured by the hair of a horse's tail accidentally drawn across the eye. On admission to the Jefferson Hospital the eye was examined very carefully by Drs. Howard, Hansell and himself, and the distinct lesion observed. The following day there had been complete reattachment of the retina.

Dr. C. A. VEASEY introduced "A Case of Atrophic Retino-Choroiditis with Beginning Angiod Streaks in the Retina."

Dr. C. A. OLIVER gave "A Detailed Report of a Series of Cases of Blindness from Fracture at the Orbital Apex."

## San Francisco Society of Eye, Ear, Nose and Throat Surgeons.

*February Meeting.*

Dr. H. WAGNER was the first speaker of the evening. He exhibited some

SLIDES OF THE BACILLUS OF WHOOPING COUGH

which he had prepared from the secretion taken from the nose of a patient exhibiting persistent cough for some weeks, not yielding to ordinary treatment. The Doctor urged the advantages of microscopic examination of the secretions from the nose and throat in many of the cases which present themselves to the specialist. By this means he had found it possible to diagnose whooping-cough at a very early period in the course of the disease, and with corresponding gain in the subsequent treatment. In regard to the particular bacillus exhibited, he said that the specific germ had been recognized for some years, but that its particular peculiarities were not yet fully known. He had observed a capsule in some specimens, but in others he could not find this feature. Different investigators were not agreed upon the existence of the capsule which he had noted. He urged the members of the Society to look into the matter and endeavor to ascertain the presence or absence of this capsule.

Dr. Wagner also spoke of a

CASE OF FACIAL ERYSIPELAS

which he had recently been called in to see, owing to the fact that the disease had infected the eye. Erysipelas of the eye, Dr. Wagner said, could be well divided into two general forms: an acute variety of iridochoroiditis, sudden in its onset and ulceratively destructive in its course, probably caused by the germ infection itself: and a second form, subacute and chronic in its nature, resulting in nerve involvement and atrophy, which was in all probability due, not to the direct germ infection, but indirectly to the toxins. The involvement in the second class of cases appears after the facial erysipelas has disappeared; what the cause of the nerve atrophy really is, seems to be a matter of doubt. It may be due to an actual poisoning of the nerve, or it may be the secondary result of an endarteritis, the arterial inflammation being caused by the toxic infection. Some slides of optic nerve atrophy due to endarteritis were shown by Dr. Wagner. He had not had an opportunity of making any slides from an actual case of atrophy from erysipelas. In the case he had been observing, pain was not noticeable between the eye and the nose on the affected side, and an examination of the nose revealed a whitish membrane, with phlyctenular spots irregularly distributed over it. Transillumination showed slight darkening on the affected side. It was probable, in the Doctor's opinion, that the erysipelatous processes were continuing in the mucous membrane of the antrum. The prognosis is always bad; the disease runs a long course with many relapses, and is in every way most discouraging. As for treatment, nothing seemed to be very efficacious. Injections of 0.5 per cent. carbolic acid had been recommended, but as this strength would not interfere with the development of the germs outside the body, it was not at all clear to the Doctor how it could affect the process of the disease. He had employed salol internally, with a 1 per cent. cocain and salicylic acid ointment locally, with apparently good results. Ischamin, or the suprarenal capsule preparation, had a very excellent effect upon the vision, improving it materially.

Dr. MARTIN presented a case of

ULCER OF THE PHARYNX.

The patient had presented herself to her regular physician for treatment, only incidentally complaining of the throat. The back of the pharynx was very greatly swollen, and slightly to the left of the median line was an ulcer about 4 or 5 cm. long by 3 cm. wide, with sharp edges and of a "punched-out" appearance. Dr. Martin suggested syphilis, but the attending physician was loath to admit the diagnosis, as the woman was a most respectable unmarried woman. He made a very searching examination, however, and elicited the fact that the woman had been betrayed some years before, though there had been no previous evidence of any disease contracted at that time. The patient had not been under observation for more than a few days, so that the result of syphilitic treatment could not be determined.

Dr. Martin also presented a case of

KERATITIS PUNCTATA

in a young woman of perfectly negative history. No history of syphilitic infection could be elicited, nor could any symptom of hereditary syphilis be detected. There was no inflammation of the eye, and the condition was only manifested through the injured vision. The punctate ulcers, which were in the tissue of the cornea, and not upon its surface, were distributed in the more or less regular manner of a cone with the apex up, and a deposit on the posterior surface of the lens could be seen. Considerable discussion was provoked by the case, but nothing was suggested as an innovation in the matter of treatment. The consensus of opinion seemed to be that the disease ran a certain course, and that when it had apparently ceased to increase, massage was about as effectual in stimulating recovery as anything that could be suggested.

# SELECTIONS.

**Caisson Disease or Compressed-air Illness.**—In the *Lancet* for February 11, Oliver reports a case of this disease in a married man, age 45 years, a sinker, who was admitted to the infirmary on September 29, complaining of loss of power in the legs and arms and of pains all over the body. Until two days before, the patient was working at one of the cylinders at the Redheugh Bridge, seventy-seven feet below high-water mark and under an atmospheric pressure of from thirty-one to thirty five pounds to the square inch. On September 27, as he was returning from work he experienced a peculiar numbness and tingling sensation all at once in his legs, felt sick and vomited, became giddy, and shortly afterward fell to the ground unconscious. His comrades carried him home. Twelve hours later consciousness returned and he complained of being in pain all over his body; his muscles were so sore and stiff that he could not turn over in bed; his limbs felt powerless. There was considerable headache and a burning in his ears. There was rather profuse perspiration. Next morning he got up and

dressed, intending to return to his work; his nose began to bleed, but did not prevent him leaving home. He had not gone far, however, when he again lost consciousness, and in this condition was brought to the infirmary. On coming to himself he complained of the same agonizing muscular pain as on the previous day; his breathing was difficult; there was a feeling of sickness and his skin was perspiring freely. With regard to his previous history, the patient had followed the occupation of a sinker for twenty years. Until now he had never suffered from the effects of his employment. He had been a steady man, seldom averaging more than a pint of beer daily. In his family history there was nothing of importance. On admission, the patient was found to be cold, collapsed and perspiring. His pupils were normal; the pulse was slow and full; there was marked muscular rigidity; pain seemed to be felt on making passive movement; and there was dyspnea, but no cyanosis of any movement. On regaining consciousness he complained of loss of power in the extremities, throbbing in the head, pains in his muscles, and a feeling of oppression in the chest. He was rather deaf. Subsequently he had a rigor, not followed by a rise of temperature. That night he had rather broken sleep. Next morning we found that the muscular rigidity had passed off, the knee-jerks were exaggerated, sensation was unimpaired, and the dyspnea was less. There was no bladder implication. The urine was free from albumin and sugar. In the course of the day he vomited and wandered, the delirium assuming rather a noisy character. He was given stimulants and a hypodermic injection of liquor strychniæ. These relieved him. That evening he slept better. On October 1 his pulse, which had never been higher than 60, was 56; it was small and firm. The skin was observed to be covered with discrete coffee-colored spots varying in size from a pin's head to a small bean, not elevated. Pain was felt on firmly compressing the muscles. The apex-beat of the heart was well defined; the first sound was feeble over the mitral area and the second aortic sound was well marked. The lungs presented nothing abnormal; respiration 18; liver dulness normal; splenic dulness perhaps a little more pronounced than usual. In walking it was noticed that the feet were kept widely apart and there was slight staggering from side to side with a tendency to fall forward. The patient had barely gone a few yards before he became extremely pale, and would have fainted had he not been caught and lifted to bed. It was several minutes before he rallied, and it was an hour or two before the feeling of exhaustion passed away. Under the microscope the red-blood corpuscles seemed paler than usal. They did not form rouleaux; the cells seemed to be of unequal size; the white corpuscles were not increased in number. The urine was acid, had a specific gravity of 1020, and was free from albumin and sugar. There were 10.25 grains of urea per ounce of urine. For several days we did not try him walking; he complained of feeling giddy, of buzzing in his ears, and of pains in his limbs. By degrees these symptoms gradually got less, and as he felt better he left the infirmary against my wishes. He returned on November 8, eleven days afterward. He told me that he had been in bed all the time and he certainly looked very feeble and could only crawl. There were still muscular pains in his shoulders and limbs and lower part of the back, with a sense of numbness. His breathing was short. There was a constant feeling of giddiness and occasionally a ringing in his ears. He had had a few days previously a slight hemoptysis. The knee-jerks were not exaggerated.

In commenting on the case, he points out that men working at that particular occupation are exposed to two sets of conditions, both of which are attended by danger: 1, in going into the compressed air of the caisson, and 2, in coming out of it. The above patient said he felt "decompression"—the coming out—the more unpleasant of the two, but this is generally more likely to be attended by symptoms than the going in or "compression." He further cites observations from caisson work in other instances, and says: "Three theories have been brought forward to explain compressed air illness: carbonic-acid poisoning, mechanic congestion of internal organs and increased solution by the blood of the gases met with in the compressed air and the liberation of these gases during decompression. We have no proof that there is carbonic acid poisoning. Although the men in the caisson carry on their work with vigor and apparently with less sense of fatigue than on the surface, there is no evidence of increased metabolism. In none of my cases was the daily discharge of urea increased above the normal. It is impossible to say whether more oxygen is absorbed; if so, the extent to which it is utilized will depend upon the needs of the system. The air which the workman breathes in the caisson is still atmospheric air. It is not modified in its chemic composition and although the individual, so far as respiration is concerned, is placed under abnormal conditions, vital operations are regulated by the same physical laws as if he were on the surface. If compressed-air illness is due to carbonic acid poisoning it ought to occur when the men are in the caisson and not after they emerge from it. That the illness is the result of mechanic congestion, especially of the brain, is the opinion entertained by Dr. Andrew Smith of New York. In several of the workmen who have died the membranes of the brain have been found deeply congested—a circumstance which may have contributed to the fatal termination. The third theory is that which has met with the greatest acceptance. Dalton's law that the weight of gas dissolved by a liquid is directly proportionate to the pressure applies to the person of the caisson worker. If in such an individual more gas is dissolved in the blood under compression the excess will be given off after his emergence into the open air. It is the presence of air sucked into the blood that is considered a danger when a large vein at the root of the neck is wounded. There can be little doubt that the escape of bubbles of gas as the blood courses through the capillaries of brain and spinal cord in the decompressed caisson worker is equally dangerous. Paul Bert in his experiments has shown that when animals were exposed to compressed air and were rapidly decompressed several of them died suddenly, and at the postmortem examination free gas was found in the blood and in the right side of the heart. In those animals that were paralyzed bubbles of free gas were observed in the spinal blood-vessels and there was in addition subcutaneous emphysema. As to the nature of the gas found in the blood and tissues I am unable to speak with certainty. We are told that carbonic acid is forty-five times more soluble than oxygen, but we have no positive proof that it is this gas. It might be nitrogen. The theory that the illness is due to blood first dissolving an excess of gas when the workman is in the caisson, and that it liberates it when he leaves the cylinder is a possible explanation of why the symptoms come on during or shortly after the decompression and of the relief that is obtained by recompression. As to treatment, preventive and curative, it is absolutely necessary that a sufficient time should be passed in the lock, both in compression and decompression, so that the individual is not subjected to the influence of sudden increment or decrement of pressure; one minute for every three pounds of pressure is considered an average period, but the length of time might with advantage be increased, for diffusion is slow. The atmosphere in the caisson should be kept as pure as possible, and men should not work in the cylinders longer than from two to four hours at a stretch. Only healthy men should be employed. Men who are intemperate in the use of spirits or who are suffering from cold in the head or are weak-chested should not be allowed to enter the caisson. The curative part of the treatment consists in relieving pains in the muscles when severe, by means of morphia and, when there is collapse, by the application of heat to the extremities, stimulants carefully administered, and a hypodermic injection of

strychnin when the breathing is impaired. Ergot is recommended with the view of relieving internal congestion, and where the symptoms develop quickly and are severe, good effects have been obtained by gradually recompressing the patient."

**Electro-Hemostasis in Surgery.**—Skene (*N. Y. Med. Jour.*, February 18) uses the electric forceps in arresting hemorrhage, by firmly compressing a portion of the bleeding tissues, or the end of a blood-vessel, between the jaws of the instrument, in order to expel as much of the moisture as possible, and then desiccating the compressed tissues by heat generated in the jaws by the electric current. In this way the walls of the arteries become united and hemorrhage is effectually prevented. The temperature required for desiccation is from 180 to 190 degrees F., which is high enough not to char or burn the tissues, but simply to desiccate or to cook them. The current required to heat the smallest instrument is two ampères and eight for the largest, at a pressure of three volts and a half. The forceps are sterilized in the same manner as other instruments. A little sterilized vaselin, or similar preparation, is rubbed over the inner side of the jaws of the forceps, which will prevent the tissues from adhering to the instrument. The rubber-covered end of the electric cable is sterilized in boiling water and afterward wrapped in a sterilized towel, or immersed in an antiseptic solution, such as a 5 per cent. carbolic solution, until needed. Bichlorid of mercury should not be used, as it attacks the metal sleeves at the end of the cable. In applying the forceps all the tissues to be treated should be firmly compressed between the heated jaws of the instrument, for if a portion extends beyond, a second application will be necessary. Before the electric current is turned on a shield is applied, where needed, between the forceps and the adjacent tissues to protect them from injury by contact with the hot instruments. Tissues which do not touch the jaws require no protection. The two connector sleeves at the end of the flexible cable are then slipped over the two terminals on the end of the forceps and pushed firmly into place to make a good electric connection. If the electric current has been previously turned on, the putting of the connector sleeves into place completes the circuit and establishes the current. The current required to properly heat the forceps is noted for each one made; therefore it can be regulated to suit the forceps from the indications of an ampèremeter included in the circuit to measure the strength of the current. If no ampèremeter is convenient, experiments upon a piece of raw tissue will enable the operator to ascertain the temperature by the sense of touch and examination of the tissue. One adjustment of a transformer or of the rheostat of a storage battery will be sufficient, if the same adjustment be made in subsequent operations; but the battery should not be used when its charge is nearly exhausted, if uniform results are desired, unless an ampèremeter is employed. For the same reason the transformer should be fed by an electric-light current, as this has an almost constant pressure, and not by one used exclusively for power, as such a current is subject to considerable change of pressure. An ampèremeter should be used with the ordinary primary battery, for the polarization and the varying strength of the exciting fluid prevent it from being adjusted so as to furnish a current of uniform strength. Before removing the forceps, the tissues projecting beyond its jaws are cut off, which may, in some cases be done while the heat is being applied, in order to save time. There being danger of losing sight of the stump by its dropping back into the abdominal cavity, as may happen in ovariotomy, the shield forceps should be left in place to hold the stump for inspection. The electric forceps are then carefully opened far enough to allow the desiccated stump to slide out from between the jaws in the direction of the teeth. Care in this is important, for, if the tissues should adhere to the instrument, which may happen if vaselin is omitted, they might be torn apart, and a ragged stump left. Before using the forceps for the first time, it is instructive to experiment with them on a piece of raw tissue so as to become familiar with their action, as well as to ascertain whether the source of electricity is suitable and can be properly controlled. Absence of bleeding upon the removal of the forceps shows desiccation has been effective, and the stump can be left without fear of secondary hemorrhage. The occurrence of bleeding immediately upon the removal of the forceps indicates that the desiccation has been insufficient, or that some of the tissues have escaped the grasp of the forceps. In this event one should reapply the forceps to the stump and repeat the heating, giving about 10 per cent. more current, or continuing the heat for a longer time, if the bleeding has been due to insufficient desiccation. The time required for desiccation varies from half a minute to two minutes, according to the thickness of the compressed tissues or size of the arteries; two minutes being required for the ordinary ovarian pedicle and the broad ligament. If the tissues to be treated are very thick, the current can be continued for three or four minutes, or even longer, without danger. When the time of application has expired, the current can be shut off by a switch, or by removing the connector from the forceps. The desiccation can be hastened by starting with more than the usual current and continuing the greater current for about a third of application. For example, if the current necessary to properly heat the forceps is ten ampères, and the time application is two minutes, give twelve ampères for about forty seconds, then decrease to ten ampères for the rest of the time. It is well to begin with the forceps closed on the first notch of the lock, and, after the heat has been applied for about half a minute and the tissues have begun to shrink, to close the instrument fully. In this way the greatest possible compression of tissues is obtained. In the treatment of isolated arteries, the end of the blood-vessel is grasped by a tenaculum and the electric artery forceps applied crosswise; or the artery is seized by the electric forceps in the same manner as with an ordinary artery forceps when a ligature is to be used.

**Successful Treatment of Perforated Gastric Ulcer by Excision and Suture.**—Hartley (*Medical Record*, February 11, p. 202) has reported the case of a woman 24 years old, who, while removing a jar from a shelf somewhat above the level of her head, was suddenly seized with abdominal pain of such severity that she fell to the floor. Shortly afterward she vomited and continued to do so at intervals for more than two hours. The vomitus consisted of water and mucus. The pain was intense from the beginning, and though at first located in the epigastrium a little to the left of the median line, it gradually extended over the whole abdomen and continued quite severe as well as paroxysmal. The temperature was 102.4 degrees, the pulse 136, small and compressible, the respiration 32 and thoracic. The patient was markedly anemic and her face pinched as from pain and sepsis. The abdomen was tender, but not markedly tympanitic. The epigastrium was strongly retracted and the recti seemed tenser and more strongly contracted in their upper segments than in the rest of their extent and than the other abdominal muscles. The point of exquisite pain seemed to be located over the left rectus muscle in its upper segment. The paient had been suffering for three years from what she designated dyspepsia. For six months her gastric disturbance, which was characterized by the excessive fermentation of food, and pain of a boring character in the stomach, after eating, had gradually increased and had been attended with increasing anemia. For two months mechanic and medicinal treatment had been employed with some apparent result. A diagnosis was made of perforated gastric ulcer and rapidly developing general peritonitis. An incision five inches long was made in

the median line, the greater portion being above the umbilicus. A quantity of seropurulent fluid was found over and among all the coils of intestine exposed. The intestines were somewhat distended, deeply injected and covered with fibrinous plaques. In order to obtain a clearer field, the incision was prolonged both above and below, so that, if necessary, the intestines and omentum might easily be displaced from the abdominal cavity. After removal the omentum and intestines were carefully freed, by means of decinormal salt solution and sterile gauze pads, of the fluid exudate as well as the plaques of fibrin. The viscera were carefully covered, kept warm, but not returned. The pelvis was now washed and cleansed with salt solution and packed with dry, sterile gauze, which remained during the rest of the operation and exerted its absorptive effects upon the exudates of the lymphatics of and beneath the peritoneum. The accumulation in the pelvis was purulent in character and large in amount. The parietal peritoneum and the fossæ between and to the outer sides of the ascending, descending and transverse colon were similarly cleansed and packed. The surface between the diaphragm and the liver, the surfaces beneath the liver and over the kidneys, as well as those of the spleen, were found involved and similarly treated with salt solution and sterile gauze packing. The anterior surface and the superior and inferior borders of the stomach presented two apparently healed ulcers, but no perforation. On raising the lower border of the stomach the lesser cavity of the peritoneum was found to be distended with a seropurulent exudate. This sac was opened in a vertical direction, carefully wiped out with gauze pads soaked in salt solution and packed. The stomach was then brought through the slit in the peritoneum and everted, so that its posterior surface was anterior and its lower border uppermost. On the upper half of the posterior wall, nearer the lesser curvature, were seen five scars, varying in size from a pinhead to two centimeters in diameter. In one of these scars a perforation was found, the edges of which were irregular and about one and a half centimeters in its longest diameter. The ulcerated area was excised sufficiently to expose an even and apparently healthy surface. One row of stitches was passed through the serosa, muscularis and submucosa, and over it a second layer of Lembert sutures, including an extent of peritoneum equal to one centimeter beyond the borders and ends of the perforation. The intestines were again washed with salt solution while out of the abdominal cavity. The various cavities where packing had been left were again treated as in the first instance. As soon as the peritoneal surface where the gauze had been left was considered clean, the packing was renewed, the intestines were carefully returned and two small drains of gauze inserted, one into the lesser cavity of the peritoneum, but not touching the suture line over the perforation, and another into the pelvis. The incision in the abdominal wall was then closed with deep catgut and superficial silk sutures, sutures being omitted at two points through which the packing left for drainage was carried. A sterile dressing was then applied. During the operation, owing to the rapidity and diminished volume of the pulse, an intravenous infusion of salt solution was given. The patient ate solid food after a month and was dismissed cured after six weeks.

## PRACTICAL NOTES.

**Antiseptic Silk for Sutures.**—The silk used for sutures at Basle is boiled and kept for several days in a strong solution of sublimate, with the result that stitch-hole abscesses are unknown.—*Semaine Méd.*, February 8.

**Dangerous Incompatibles.**—The *Lancet* (February 11) reports the death of a young woman from administration of a medicine containing liquor strychniæ in conjunction with liquor arsenicalis, the alkali of the latter precipitating the strychnin as a pure alkaloid, which residue may amount to an excessively toxic dose and be taken in the last dose from the bottle.

**Two New Symptoms of Chlorosis.**—M. Goulouboff (*La Méd. Mod.*, 1898, No. 39) directs attention to the sharp pains in the left side over the spleen, usually credited to the pressure of the corsets, but really associated with hypertrophy of the organ. The second symptom is made apparent by the pains in the long bones at their ends, particularly in the tibia. These are brought out by percussion or pressure. These pains simulate those found in the infectious diseases.

**Immobilization of Thorax for Tuberculosis.**—A. M. Bloch recommended, a year or so ago, immobilization of the affected side of the thorax in tuberculosis, as he had found it a very effective treatment (Vide JOURNAL, xxx, 1383). He at first used a plaster cast for the purpose, but he now substitutes a bandage moderately tight over the upper part of the chest, over a layer of cotton, held by bretelles of cloth like the bandage.—*Presse Méd.*, February 1.

**Helferich's Deferentectomy.**—The operation is performed without anesthesia, the vas deferens being drawn out through a small incision in the skin, the distal end cut and the central end pulled out after carefully pushing back the vessels. The emission of urine was improved in twenty-two out of the last twenty-three cases. Six were cured; seven temporarily improved; three died. The evulsion was always borne well.—*Cbl. f. Chir.*, from Fülle's inaug. diss., Greifswald, 1898.

**Paraldehyde in Asthma.**—In the *Lancet* for February 11, MacGregor confirms previous investigations tending to show that this substance speedily relieved the spasm and induced sleep. He has used the drug in a fairly large number of cases of idiopathic asthma and other forms of spasmodic dyspnea, and no other drug has given him so satisfactory results, and it is absolutely safe, not only relieving the spasm but inducing tranquil, refreshing sleep without objectionable after-effects. He reports eleven cases.

**Anaerobic Microbes and Purulent Pleurisy.**—Rendu relates three observations of putrid purulent pleurisy in which anaërobic microbes predominated and were alone found in one case. He suggests that such cases are best treated with a substance that generates oxygen, like potassium permanganate, which produces nascent oxygen. Two of his cases were thus treated with irrigations of a solution of potassium permanganate and recovered much more rapidly and completely than the third, treated with sublimate.—*Gaz. de la. Soc. Med. des Hôp.*, report of session of February 3.

**Hernia and the Bicycle.**—The bicycle brings the muscles of the abdominal wall into play while suppressing the vertical descending position, and is recommended to persons with hernia as a beneficial exercise progressively followed, avoiding all excesses, especially speeding or riding up hill. The machine should be low, with the seat well back of the axle of the pedals. It is the first exercise allowed after radical operations for hernia, and examples are known in which the bicycle exercise has cured the hernia without an operation.—*Bull. de l'Acad. de Méd.*, January 31.

**Ichthyol Suppositories in the Treatment of Prostatitis.**—A. Freudenberg has been treating nearly forty cases of prostatitis, some of gonorrheal origin, all chronic or in the later stages of an acute attack, with rectal suppositories made according to the following formula: Ammon. sulpho-ichthyol, .3 to .6 or .7, 5 gm., ol. cocoa 2 to 2.5 gm. Misce exactissime f. suppositorium. N. B. No "hollow" suppositories! One suppository in the morning after defecation, and another on retiring at night. There was retrogression in every case, often surprisingly rapid, and in nearly every case complete cure of the subjective disturbances, pain, pressure, desires to urinate, etc., and of the hypertrophy or induration of the gland.—*Memorabilien*, January 23.

**Vesical Hematuria of Neoplastic Origin.**—In case of an inoperable tumor of the bladder and pronounced hematuria, P. Nouges injects small quantities of a 5 per cent. solution of gelatin in physiologic salt solution, thoroughly sterilized in a water-bath, after the bladder has been carefully emptied and cleansed with a solution of boric acid. Then the bladder is nearly filled with the gelatin solution without stretching, and the solution is left in it. This measure is not infallibly successful, but it is often of great benefit.—*Cbl. f. Chir.*, February 11.

**Salicin in Puerperal Fever.**—In *Annals of Gyn. and Ped.*, February, Atherton reports on the use of salicin instead of quinin in puerperal fever, 3 grams being given every three hours, and the temperature falling, in twenty-four hours, to normal in the morning and 99.5 degrees at night, in one case, while in a case of cystic poisoning from necrosed placenta, where, after four weeks' treatment, in spite of intrauterine douches and internal medication, she had been unable to reduce the temperature below 102 degrees each afternoon, she substituted salicin for quinin as above, and in one week the fever had disappeared, with no other change in the treatment.

**Ankylosis of Joints.**—Dr. Abel M. Phelps (*Railway Surgeon*) after experimentation upon dogs, concludes that a normal joint will not become ankylosed by simply immobilizing it for five months; that motion is not necessary to preserve the normal histologic character of a joint; that when a healthy joint becomes ankylosed or its normal histologic character changed, it is not due to prolonged rest, but to pathologic causes; that immobilizing a joint in such a manner as to produce and continue intra-articular pressure will result in destruction of the head of the bone and the socket against which it presses, and finally that atrophy of the muscles of the limb will follow prolonged immobilization of a joint.

**Sottocasa's Fixation of the Kidney.**—1. Simon's incision, opening up the kidney, incising the adipose capsule, protrusion of the middle of the convex edge. 2. Incision 2 cm. long, 1 cm. deep in the free edge (upper third), and formation of a muscle flap out of the quadratus lumborum, the same length and 1 cm. in width, opposite the renal incision. 3. Suturing the muscle flap in the kidney with two fine silk sutures, and other sutures embracing the capsule. 4. Closing the wound with buried sutures. Only attempted as yet on dogs. Killed the fortieth day, the kidney was found firmly fixed in the desired position. The muscular tissue of the flap had been transformed into tough, white connective tissue incorporated into the substance of the kidney, from which it could not be detached even by a hard pull.—*Cbl. f. Chir.*, February 11.

**Massage of the Tonsils.**—Kantorowicz has found that he can reduce hypertrophied tonsils to normal size by massage with the finger for a few minutes. He introduces his forefinger, protected by a rubber cot, as far as possible behind the tonsil and rubs fifteen to twenty times with his finger around it, and then up and down the same number of times. The massage, repeated about fourteen times, reduces even the most inflamed and swollen tonsils to normal. He concludes (*Deutsche Med. Ztg.*, 1898, No. 63) by calling attention to the frequent coincidence of carious teeth with hypertrophied tonsils; in 75 cases of bilateral hypertrophy he counted 296 teeth affected with caries, and in 24 unilateral cases, 101, suggesting that better care of the teeth might reduce the number of cases of hypertrophied tonsils.—*Revue de Laryng.*, xix, 42.

**"Pyopneumothorax of Necessity."**—By this term Galliard describes a cold, gaseous, thoraco-parietal abscess complicating a pyopneumothorax, and reports an observation. It followed a traumatism which produced a dorso-axillary empyema on the same side and dry pericarditis. As an emphysematous abscess of the thoracic wall is usually of a pulmonary origin, evidences of a tuberculous cavity, actinomycosis or of gangrene of the lung must be sought in diagnosing. If not found, pyopneumothorax is the next suggestion. The prognosis being very serious, the rupture of the abscess must not be awaited, especially if the pus is fetid. In cases complicating a partial pyoneumothorax, it may be sufficient to incise the pocket, later opening wider the intercostal space in which the fistula is located. But if the pyopneumothorax is total, leave the gaseous abscess alone, and empty the pleura by inferior pleurotomy, which will entail the disappearance of the abscess.—*Semaine Méd.*, February 8.

**Cocain Combined with Morphin.**—Prof. A. Ceci dispenses with an anesthetic in every possible case and only uses chloroform when absolutely necessary. He considers chloroform and ether dangerous agents and that the clinic statistics give no indication of the damage wrought by the former in the economy. For operations on the fingers, members, neck, penis, scrotum, testes, and in radical operations for hernia, he uses a solution of cocain too weak to produce intoxication (one gm. to 200 c.c. of a 3 per cent. solution of boric acid), combining with it, if necessary, an injection of morphin a few minutes before operating (two to three centigrams for elderly or nervous persons, one centigram for the young, rarely finding it necessary to use morphin for a person of 18 to 20 years). His record to date is 4054 operations, including 1298 with cocain, 1586 with chloroform and 1170 without any anesthetic. Out of 543 radical cures of hernia, 362 were with cocain.—*Semaine Méd.*, February 8.

**Surgical Intervention in Basedow's Disease.**—P. J. Möbius advocates unilateral resection of the goiter when the heart is in good condition, as medical treatment is so impotent. Chloroform should not be used in operating, but cocain, and incisions should be avoided as much as possible, using the thermocautery when practicable. Abadie reports a very severe case cured completely by resection of one centimeter of both cervical sympathetics below the superior cervical ganlion (April, 1897). Jonnesco states that he has cured six and improved four out of ten cases of Basedow's disease treated by extensive or total resection of the three ganglia of the cervical sympathetic on both sides, some over two years ago. He finds that this operation is especially effective in the primary forms of Basedow's disease, but less satisfactory in the secondary forms, which are the most amenable to medical treatment. He adds that the improvement is frequently very slow, and cases that disappointed at first ultimately result in a complete cure.—*Presse Méd.*, February 1.

**Chronic Vaginalitis of the Testes.**—Pascale has operated on fifty cases and made comprehensive histologic and experimental studies. He distinguishes a dropsical form with preservation of the epithelium; a hyperplastic form with ultimate degeneration of the epithelium and thickening of the wall of the small arteries, endarteritis and hyperplasia of the connective tissue, elastic fibers and muscle fibers; a vascular form with enlargement of the capillaries, which can be considered a variety of the preceding form, and finally a degenerative form in which the epithelium is early destroyed and the tissues acquire a homogeneous and cartilaginous appearance. There are no true cartilage cells, however, any more than there is bone formation, although there is impregnation with lime salts.—*Gaz. degli Osp. e delle Clin.*, 1898, No. 127.

**Operative Treatment for Severe Myopia.**—Removing the lens has become quite a frequent operation since Fukala's recommendation, but Prof. E. Fuchs restricts it to myopia with over 15 D. and cases without pronounced alterations at the back of the eye, threatening a central scotoma, for instance. He never operates on a patient over 40 years old, and never if the other eye is useless. He does not consider the operation indispensable for the sight, nor entirely free from danger, As the alterations in the back of the eye, consequent to the myopia, such as

atrophic processes, hemorrhages in the retina, etc., persist after the operation, which is no protection against them nor against their further development, the eye can not be worked like a normal eye all day, but must be favored. Operating is to be preferred to the wearing of glasses for waiters, coachmen, firemen, field hands, etc., but out of 18,000 patients that have applied to him during the past year he has only found the operation absolutely indicated in ten.—*Vienna Klin. Woch.*, February 5.

**Round Ulcer of Duodenum.**—O. Burwinkel publishes five observations to corroborate his statements in regard to the facility with which round ulcer of the duodenum can be differentiated. The special points are the melena following symptoms of severe internal hemorrhage and continuing for several days without any vomiting of blood; the general condition, and results of rectal palpation, excluding cancer and tuberculosis and a rectal source for the hemorrhage; the pain not appearing until two or three hours after meals, much later than with ulcer of the stomach, and localized at the umbilicus, not irradiating around to the back as with gastric ulcer. The tongue is less coated, the breath not fetid and the appetite is retained. Each of the five cases was a man approaching forty; all but one had hereditary tuberculosis antecedents.—*Deutsche Med. Woch.*, Dec. 20, 1898.

**Aspiration of Medicinal Powders into the Upper Air-Passages.**—Leduc's statement that since he has been using this method of treatment he has found tuberculous laryngitis the easiest cured of all the manifestations of tuberculosis is confirmed by O. Betz, who has found it extremely beneficial in all affections of the upper air-passages, including diphtheria. The only instrument required is a glass tube 6 cm. long, with an extension 1 cm. long at one end, bent down at an angle of 100 degrees, and at the other an extension 4 cm. long, bent down at an angle of 145 degrees. The impalpable powder is spread out on a smooth surface, the tube is inserted in the mouth, the short end fitting down into the throat, the long end reaching down into the powder. As the subject draws a deep inspiration the powder is drawn in with it, and is evenly distributed all over the surface of the larynx. Leduc prefers di-iodoform, combining it with cocain if there is pain: di-iodoform 8 gm., cocaini mur. .08 gm. Two to six aspirations a day. Betz uses two other tubes, one straight, with only the bend at the end to reach the powder to use in treating the throat with natrium sozoiodicicum in diphtheria, etc. The other has an upward bend 2.5 cm. long, to aspirate the powder into the nasopharyngeal cavity, the nostrils closed. Children soon learn to aspirate in this way without difficulty.—*Memorabilien*, January 23.

**Synergistic Combinations.**—Scheinkman (*N. Y. Med. Jour.*, February 18) finds that the method of combining therapeutically analogous drugs in practically minute doses, so as to constitute in the aggregate a moderate therapeutic dose, is by far superior in effect to a similar dose of any individual one of its constituents administered alone. Especially is this true with the members of the coal-tar products and with most of the alkaloids. It seems as though when in combination, while their respective characteristic therapeutic properties are acting conjointly in perfect harmony, their toxic properties—and such are, as a rule, possessed by nearly all of them, though they are not usually analogous in character—are either individually too insignificant, being in small doses, or they neutralize one another more or less effectively. He gives the following combination as a type, and as an adult dose, giving most gratifying results for antipyretic, analgesic, antiperiodic purposes: Antipyrin, phenacetin, quinin sulphate, powdered ginger, āā, ʒss; caffein citrate, grs. xv. Divide into fifteen capsules and take one every two hours. In the case of children a proportionate dose is given in a mixture, the vehicle being equal parts of syrup of yerba santa and elixir glycyrrhizæ, a composition which diguises effectively the bitter taste.

**Abdominal Myomotomy.**—Total extirpation or supravaginal amputation is the question discussed by O. Küstner in the *Berliner Klinik*, 1898, No. 125. His latest series comprises fifty supravaginal amputations, with one death, and forty-eight total abdominal extirpations with six deaths. In three of the fatal cases streptococci and staphylococci were found in the abdomen, although two had apparently died from shock or heart failure. He decides the above question according to the menace of ileus or peritoneal sepsis. After scrupulous asepsis he lays most stress on limiting the secretion from the wound. He attains this by careful hemostasis by closing the wound completely, or if this is not possible, by a brief drainage of the abdominal cavity. The advantages of the supravaginal amputation are: its greater simplicity, especally with nulliparæ, the smaller extent of the wounds and the absence of germs in the amputation wound. On the other hand, total extirpation is urgently indicated in case an intramural cervical myoma extends so far that an amputation in the cervix is impossible, or if the myoma has effaced the cervix, and always for a suppurated myoma. With these exceptions he concludes, good results can be attained with either method.—*Cbl. f. Chir.*, February 11.

**New Treatment for Prolapse of Uterus.**—With the object of setting up adhesions and thus strengthening the broad ligaments, Parsons (*Lancet*, No. 3936, Vol. i, 1899, p. 292) practices injections of solutions of quinin for the correction of prolapse of the uterus. The patient is placed in the lithotomy position, the vagina is thoroughly douched and rendered as aseptic as possible, the perineum is retracted with a Sims or an Auvard speculum, another retractor being used to hold up the anterior wall of the vagina if necessary, and the lateral walls are exposed. The uterus is held, with one hand, as nearly as possible in its normal position by means of a probe passed into its interior. With the other hand the injections are made on each side, through the vaginal wall into both broad ligaments, on a level with the external os and from about three-quarters of an inch to an inch from the junction of the vagina with the cervix. After the syringe and speculum have been withdrawn it is necessary to keep the uterus up with a cup-and-stem pessary held by four tapes tied around the waist and left in position for three or four days. A special syringe, with a long, thin nozzle, is a great convenience, because it does not obstruct the light, and it enables the operator to see that the needle point pierces the vaginal wall at the right place. The needle should not be more than an inch in length or much thicker than a hypodermic needle, in order that the puncture may close quickly.

**Pichi.**—In the *Phila. Med. Jour.* of February 18, Whitaker discusses this comparatively new drug, it being described as "slightly astringent, bitter, tonic, terebinthinate, diuretic, and hepatic stimulant. As empirically established by the Peruvians and Chilianos, the remedy is readily available for diseases of the mucous surfaces, to all which it is applicable except in structural nephritic lesions, the only condition in which it is contraindicated. Mastication of the bark, branches, etc., produces increased salivary secretion and a sensation of stimulating warmth in the mouth, which, after the saliva has been swallowed, extends along the esophagus and into the stomach. The administration of a full dose of the fluid extract creates a sensation of agreeable warmth in the stomach, which, upon larger dosage, gives way to nausea and vomiting. The continued use of pichi causes the appetite to improve; the gastric secretions evidently being stimulated, digestion is assisted and assimilation increased. A noticeable feature of the effect of the drug is the feeling of personal comfort and well-being. Sensations of buoyancy take the place of lassitude and mental depression—conditions frequently observed in diseases of the liver and kidneys. Under the benign influence of

pichi the chronic dyspeptic loses his feeling of oppression and distress after eating. Gaseous fermentations and eructations cease; flatulence is prevented, or, when present, cured. The large, white-coated and flabby tongue changes to one of a clean, pinkish hue. The red, glazed, stretched, fresh-meat looking tongue occasionally seen, assumes a normal color. Ballooning of the small intestines is prevented; borborygmus is relieved; the pale, pasty, chalk-colored, putty-like, or scybalous stools become darker in color, softer in consistency, and are expelled with ease and comparative comfort. Intestinal endosmosis is accelerated and the deficient mucus in the intestinal canal is increased to a normal approximate, and a daily stool, becoming intensely colored, of a pungent odor, usually is voided. Within two hours after the ingestion of the initial dose of pichi, the drug is present in the urine, which rapidly increases in quantity. Pathologic urine, offensive in odor and of high specific gravity, quickly approaches the normal standard. The remedy seems peculiarly happy in its effect when administered during cystitis, and, under its administration, ropy, alkaline and fetid urine soon loses its turbidity and within a few days becomes clear, regaining its normal acid reaction and specific gravity."

**Antitoxin in Traumatic Tetanus.**—Copley (*British Med. Jour.*, February 11) has, during the past two years, had the opportunity of observing and treating four cases of traumatic tetanus. In all of them the symptoms were well marked, the spasms severe, and in all there was a definite wound in a septic condition. Also in each case there was the probability of infection from soil or horse dung. In two the incubation period was ten days, in one six days, and in the other indefinite, since the infection probably took place through a chronic ulcer which the man had allowed to become foul. The treatment adopted in three of the cases was subcutaneous injections of tetanus antitoxin, combined in two with occasional draughts of chloral and bromids. These three cases recovered. In the fourth case, admittedly the most severe, he was unable to procure the antitoxins in time and the patient died in twenty-four hours after. As to dosage he says: "This is a most important point. Large doses, 30 c.c. at once, and repeated at least every six hours till some improvement is seen, even in a case which promises to be mild, is the only fair way of testing the antitoxins. I began in my first and second cases very cautiously, as the remedy was new to me, but in my second case I observed no improvement until I had injected 50 c.c. within eight hours, that was 30 c.c. at 10 A.M., and another 20 c.c. at 6 P.M. This man nearly died from the severity of the spasms, and I feel sure that if I had begun larger doses earlier he would not have reached such a dangerous condition. In any case which, from the shortness of the incubation period, the large surface infected, and, I believe, the number of the nerves involved, threatened to be a severe one, I should not hesitate, while the patient was under an anesthetic to inject 50 c.c. at once, and repeat the dose in four hours' time. . . The only disagreeable symptom I could ascribe to the antitoxins was an irritable rash, either urticarial or erythematous." He does not believe that any harmful effect would follow 100 c.c. injected at one dose distributed over five injections. In two of his cases which recovered, the infected part was amputated; in the third, the ulcer was scraped and cauterized with fuming nitric acid; in the fatal one, the edges of the wound were excised, together with a metacarpal bone, and the wound cleansed with formalin solution (1 in 80).

**Formalin in the Removal of Malignant Growths.**—In the *British Med. Jour.* (February 11), Mitchell discusses the use of formalin in the treatment and removal of inoperable malignant growths. In a patient with sarcoma of the cheek, the tumor four inches in diameter and the size of a man's fist, with, in one place, the sarcomatous tissue giving rise to constant and rather severe hemorrhage, which the usual styptic methods failed to stop for more than a few hours, he applied a solution of caoutchouc to protect the surrounding skin, soaked a small pad of absorbent cotton wool with a solution of formalin containing 20 per cent. formic aldehyde, and applied this to the raw surface, then covered it with gutta percha tissue, and held it in place with a bandage. Not only was the hemorrhage entirely stopped, but in twenty-four hours there was produced a hardening and necrosis of the tissues, extending nearly a quarter of an inch from the surface, which made it seem possible to remove the whole growth by first coagulating the tissues with formalin and then cutting away some of the necrosed part, daily, always, however, leaving sufficient of the latter to prevent a recurrence of hemorrhage. With a scalpel and sharp spoon he removed as much of the necrosed part as he dared, and then filled up the cavity with cotton wool saturated with the formalin solution as before. Daily repeating this he was able in a very short time to tunnel right into the center of the tumor, and eventually remove it completely, notwithstanding that it was highly vascular, and during the process there was practically not a drop of blood lost. The formalin seems to exert its influence equally in all directions, and to be capable of penetrating to almost any depth if constantly applied. There was occasionally considerable edema of the lower eyelids and lips, and on one occasion, of the cellular tissues of the neck, which caused suspension of treatment for a few days lest it should cause edema glottidis. There was, however, never any sign of any such a condition. When the application of formalin is suspended for a few days, a line of demarcation forms with exactly the appearances seen in dry senile gangrene of the extremities.

**Prevention of Carcinoma Uteri.**—Prof. A. Dührssen asserts that more women die of cancer of the uterus every year in Germany than lives were lost during the Franco-Prussian war, reiterating still more forcibly, that women in the climacteric period are exposed to as many chances of dying from cancer of the uterus as a soldier is to be killed during active war. The same proportion exists in other countries, and the fact is well known that it occurs principally among the well-to-do, affecting chiefly well-nourished persons in good health. Very few women who have already been under treatment, or women with cancerphobia die of it, as they apply early to the physician. He advocates as prophylactic measures a solemn warning to every woman to apply to her medical attendant at the slightest discharge or abnormal bleeding during the critical period, especially a discharge stained with blood. Pain is seldom experienced until the later stages. The physician should make a bimanual examination with every assistance from mirror, curette, test excision, etc., and extirpate the uterus at evidence of a neoplasm. He even goes farther and practices as a preventive measure, at the first evidences of a discharge, the removal of the entire membranous lining of the uterus, as Billroth, Thiersch and Waldeyer have established that a cancer only develops from epithelial elements, and the removal of the entire epithelial lining of the uterus will forever protect the organ against cancer. He accomplishes this with vaporization, according to Sneguireff (he has never observed any dangerous consequences), or by incision of the membranous lining through a T-incision into the uterus, drawn out through an incision in the anterior vaginal vault. Still another security is obtained with Schröder's high amputation, which, nowadays, is without danger and still leaves a functionating uterus. As the cancer may spread and invade the surrounding tissues within a week of the first discharge noted (personal observation) and thus become inoperable, not a day should be lost in seeking a physician. He quotes Haggard in conclusion, who claims that women during the climacteric period should be under medical supervision, as a preventive measure second only in importance to vaccination and quarantine.—*Deutsche Med. Woch.*, January 26.

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## THE DIAGNOSIS OF RENAL INSUFFICIENCY FROM THE FREEZING-POINT OF THE BLOOD.

Clinicians have learned not to depend too implicitly upon the presence or absence of albumin or tube-casts, or both, in the diagnosis of disease of the kidney, but to be governed in arriving at a conclusion by the *tout ensemble* of the individual case. The diagnosis of nephritis may, therefore, be ventured at times when some of the characteristic urinary phenomena are wanting; but with or without these it is often more important to know how well the kidneys are performing their function. This cannot be more than approximately determined by estimation of the nitrogen elimination, and a simple method of gaining the desired information would serve a most useful purpose. This, KORANYI (*Berliner klin. Woch.*, 1899, No. 5, p. 97) thinks, can be learned from a study of the freezing-point of the blood. As the result of numerous careful experiments and extended clinical observation with relation to the osmotic pressure of the blood he has found that the freezing-point of the blood of healthy individuals is susceptible of a reduction of 0.56 degree C., the variation not exceeding 0.01 degree, while in morbid states the variations are more marked. In cases of anemia of high grade and in cachectic states, the reduction is less than 0.56 degree, and greater when carbon dioxid has accumulated in the blood, returning, however, to the normal when the blood is exposed to the action of oxygen. The reduction is greater than 0.56 degree when the activity of the kidneys is inadequate, and it differs from that due to cyanosis in not being influenced by the action of oxygen. It was found, further, that in the presence of acetonuria also, the freezing-point of the blood was reduced, the reduction, however, disappearing in some cases on exposure to oxygen.

Observations were made to determine if, and to what degree, various conditions apart from renal disease were capable of influencing the osmotic pressure of the blood in persons suffering from such disease. It was found that in healthy rabbits no change was induced by means of various modifications of the food, as well as through hunger; while in cases of renal insufficiency the reduction in the freezing-point of the blood was governed largely by variations in diet. The rabbits were divided into groups, each of which was fed for two days upon the same food—one with oats, one with starch and water, one with somatose, a fourth receiving subcutaneous injections of oil, and a fifth receiving no food at all. At the end of the two days a kidney was extirpated from each animal in order to establish renal insufficiency; no food was given for a further five or six hours; and then the carotid artery was opened and the freezing-point of the blood determined. It was found that the changes in the blood were slight in animals that had received their accustomed food; more pronounced when an exclusively carbohydrate diet was given; still more so in animals that had received somatose; yet still more pronounced in animals deprived of food; and most marked in those that had been upon an exclusive fat-diet. A conclusion as to the degree of renal insufficiency can, therefore, be formed from the degree of reduction in the freezing-point only when the cases to be compared have been kept upon the same diet. It is conceived that this reduction is dependent upon the failure, in whole or part, of the blood to be freed from an excess of the molecules resulting from albuminous metabolism. The reduction is augmented proportionately with the disintegration of albumin and with the impermeability of the kidneys, but that these are not the sole factors is indicated by the fact that it is greatest in those upon a fat-diet. The result is dependent not alone upon the amount of albuminous metabolism, but also upon its kind. The favorable results with carbohydrate feeding, as compared with the unfavorable results with proteid feeding and with hunger, show that the reduction in the freezing-point in the presence of renal insufficiency is dependent, in the first place, upon the amount of carbohydrates available. In the absence of these the reduction is augmented. If it be borne in mind that small amounts of acetone augment the reduction in the freezing-point and that deficiency in carbohydrates favors the formation of acetone from proteids, it is easy to understand that the marked increase in the reduction in the presence of renal insufficiency and carbohydrate hunger is due to acetonemia.

These observations are interesting and suggestive,

but their clinical value must yet be determined. The technic is not described, and it remains to be seen if the method of procedure is susceptible of application to the daily work of the physician. The utility of a test depends not a little upon its practicability.

## THE PROPAGANDA OF VEGETARIANISM.

There exists in this country and in England, and probably in all other civilized countries, a very numerous and respectable class of people who not only refuse animal food for themselves but carry on a more or less energetic propaganda in favor of vegetarianism. In this country this class includes at least one or two scientific physicians of reputation, and in Great Britain, a medical writer, whose works have done much to mold professional opinion, has, in his latest book, come out as an uncompromising advocate of vegetarian ideas. How far this adherence will affect his general influence is a question, but there is no doubt that his accession will be welcomed as of importance by those to whom he has allied himself. With the laity the question is largely one of sentiment; eating of animal flesh is to some people only a mild form of cannibalism, or at least of necrophagous tendency that is positively repulsive to them, while to others of a zoöphilistic turn the slaughter of wild or domestic animals for food is a sort of legalized murder that they can not conscientiously encourage or profit by. Add to these two classes, not numerically strong, a still larger number of those influenced by them and even more by the medical advisers of vegetarianism, we have quite a respectable contingent of the population that is more or less strongly inclined to adopt the principle of rejecting animal food.

The medical advocates of vegetarianism, excluding fanatical irregulars, are not very numerous, but they also include some highly respectable names. Some of them, like Dr. HAIG, seem to have been inevitably led to the views they hold by over-cultivation of a special line of study or research; a too exclusive view of one pathologic aspect blinding their broader vision of the whole range of physiologic functions. Still a few others probably are so mentally constituted that even a thorough medical culture can not completely eradicate inborn or acquired prejudices, that lead them to taking sides in a controversy without due regard to the well-established scientific facts. Some of this class are not aggressive, but simply govern their own conduct without regard to what others may do or think. Others, however, are ardent advocates of vegetarianism and do not hesitate to use all the sentimental objections in their arguments in its support. The really scientific testimonies to the utility or even the possibility of general abstention from animal food are very few, and the most that can be proven is that in some countries a more extensive meat diet than is absolutely beneficial is used, and that, sometimes, in individual cases, to the damage of the user's health. The argument often employed that human dentition is not that of the carnivora but that of the frugivorous monkeys goes but a very little way; it would be fairer to take into account the whole digestive tract. Monkeys are not absolutely vegetarian in their diet, and rodents, which have a decidedly non-carnivorous dentition, are many of them flesh eaters, as are our domestic carnivora vegetarians. The fact that intestinal putrefaction is favored by a flesh diet may have some weight in special cases, but its cosmetic advantages, as urged by some vegetarians, have a less scientific importance. The statements as to the comparatively greater endurance of vegetable feeders can be more than counterbalanced by directly contradictory ones. No training diet, for example, of men fitting for athletic feats requiring strength and endurance is strictly vegetarian, to say nothing of the general experience of the whole world. It is the omnivorous human being that goes everywhere, conquering all obstacles, and forms the ruling races of the earth.

The economic argument in favor of vegetarianism, which was brought out strongly in a recent editorial utterance of a leading eastern paper, has only a partial application, and therefore is not available in support of the theory as a whole. Undoubtedly, in a country with a crowded population, where agriculture can be carried on in an elaborate and thorough manner, animal food is dear and its excessive use is wasteful, but there are other large sections of the earth's surface where climate and soil are only suitable for the production of this form of sustenance, and still others, like the Arctic and Antarctic regions, that would be absolutely uninhabitable without it. It is in just these regions that Nature seems to provide the greatest abundance of this kind of food, both on land and in the waters, thus rendering them fitted for human habitation. This is, in its way, a very strong argument against any universal endorsement of vegetarian ideas.

There still remain the physiologic arguments for and against animal food, after those from the general experience of mankind and the economic issues involved are exhausted. So far as we are aware, no physiologic authority has ever maintained that man could thrive under a diet deprived of animal proteids. If MUNK and UFFELMANN'S estimate is accepted, at least seven-tenths of the proteids ingested must be of animal origin, and this has been accepted by some at least of the latest writers on the subject, and has not been seriously contested, so far as we are aware, by any really eminent authority. Vegetarians have so far, as a rule, supplied their needs in this respect by including milk and eggs in their diet, apparently ignoring the fact that by eating the latter they are destroying animal life root and branch, and thus acting in direct opposition to one of their most cherished doctrines, that of the sacredness of animal life and the inhumanity of its exploitation for human luxury. There are several questions that might arise in con-

nection with this exception to a purely vegetable diet, but they can be passed over without further comment. The real question is how far such substitutions for meat diet, admitting their efficiency, are generally practicable, and whether the product in the form of a healthy and robust population would be better or worse than that under the existing conditions of human omnivorousness. Certainly none of the dominant races of the earth are vegetarians, and those peoples that are such to any extent are apparently such from necessity and not from choice, and in physical and mental capacity they certainly do not especially excel. Admitting it as practicable, with the use of milk or milk and eggs, there are still some possible inconveniences to vegetarianism, in the bulk of food required and the possible excess of mineral salts inducing atheroma, as has been claimed.

Taking everything into consideration, the really valid claims for an exclusive vegetable diet, if indeed they can be called such, are the sentimental ones; the physiologic arguments are deficient, and those from general experience of mankind have even less strength. In fact, there are very few if any consistent vegetarians in the world, and certainly none in civilized countries who are consistent in the matter of exploitation of our humbler fellow-creatures. We take their lives not only for food, but also for an infinite number of other reasons, and wage a constant war against them for our own convenience, not to say our actual existence as a species, which would otherwise be seriously threatened by the multiplication of more prolific vegetable feeders. It would seem almost a pity if, in deference to sentimental vegetarianism, this necessary slaughter could not be utilized in other respects, and in accordance with natural human cravings based upon structural peculiarities.

## THE ANOMALIES OF ENGLISH MEDICAL DEGREES.

A case has just been decided in the English courts which brings into striking light the confusion produced in England by the antiquated, complicated system of medical "qualifications" in vogue. Mr. H. K. HUNTER, a Licentiate of the Society of Apothecaries (L. S. A.), qualified by his diploma to practice medicine, surgery, and midwifery, and duly enrolled upon the medical register as a practitioner, had the audacity to engrave upon his door-plate "physician and surgeon." For this offense against the proprieties of the profession he was first warned and in March last prosecuted by the Penal Committee of the General Medical Council, the great official executive committee of the English profession. To make the farce more solemn, and apparently with a view to making doubly sure that the committee should, in the words of DOGBERRY, "write me down an ass," two suits were brought, one for using the word "physician," and the other for using the word "surgeon" upon the door-plate aforesaid.

The judge of the lower court decided, after hearing the evidence in the first case, that Mr. HUNTER had no legal right to the use of the title "physician," and accordingly fined him $25 and costs, whereupon the Penal Committee, with most unexpected, if rather belated, magnanimity, dropped the second suit.

The Society of Apothecaries promptly took the matter up and appealed the case, and this appeal has just been heard by the Queen's Bench. The justices sustained the finding of the court below as to the actual legal right to use the title, but believing that Mr. HUNTER had acted in good faith and in the full belief that he had a right to so describe himself, they quashed the conviction and fine.

In order to appreciate the possibility of this ludicrously small-minded episode it must be remembered that there are no less than nine, or, counting honorary or advanced ones, eighteen separate degrees or qualifications which entitle a man to practice medicine in Great Britain.

The Government, of course, grants the right, but does so by recognizing the diplomas of four great groups of bodies, by whom all examinations are conducted. These are: 1, the Royal Colleges of Surgeons of London, Edinburgh and Dublin; 2, the Royal Colleges of Physicians of the same cities; 3, the Universities of Oxford, Cambridge, London, Durham, Edinburgh and Dublin; and 4, The Society of Apothecaries. The Colleges of Surgeons confer each two degrees—Member (M.R.C.S.) and Fellow (F.R.C.S.); those of Edinburgh and Dublin adding to the already formidable alphabetic procession the letters "E" and "I" (Ireland) respectively. The Colleges of Physicians, in order to prevent the problem from becoming too simple, grant three grades of degrees: "Licentiate" (L.R.C.P.), "Member" (M.R.C.P.), and "Fellow" (F.R.C.P.), so that a "Member" of the College of Surgeons is only equal to a "Licentiate" of a College of Physicians, and a surgical "Fellow" to medical "Member," while there is no surgical equivalent for the awful dignity of an F.R.C.P. Then come the universities, with the simple and rational degrees of M.B. and M.D., the latter with an extremely stiff examination and very rigid time-requirements, and finally the Society of Apothecaries and its single L.S.A.

There are also two ancient and little-used degrees conferred by the universities: Bachelor and Master of Surgery (B.Ch., M.Ch.), but these alone do not entitle to practice.

While this complexity is bad enough in itself, it would matter practically but little more than the large number of colleges from which the degree of M.D. can be secured, for instance with us, if all these qualifications led to the use of some common vernacular title by common consent, but that is precisely what they do not do. Of all these *eighteen* degrees only *one* confers upon its possessor the legal right to use the prefix "Dr." before his name. This is M.D.,

and the examinations leading to this are so severe and so academic, and the amount of time required so great and so inconveniently arranged, that scarcely one medical man in forty possesses it. Nor is the right merely a formal one, for although the laity fortunately ignore these distinctions and address nearly every medical man as "Doctor," yet in professional gatherings and discussions the title is rigidly limited to those possessing the degree, and it is even a great practical advantage to a man to be able to engrave the proud letters "M.D." upon his door-plate, so much so that some men go over to Belgium for a year to secure it and American physicians are sometimes consulted as to how long it would take an English practitioner to obtain the degree in the United States, with a view to using it in England.

It is a continual source of embarrassment to foreign medical men visiting England, to know whether to address or refer to the doctors he meets as "Dr." or "Mr." for though he may not say anything, the prominent surgeon resents being called "Dr." almost as much as the physician would being addressed as "Mr." Even Englishmen themselves can not keep matters straight, and we have frequently heard medical men, in referring to others who had preceded them in a discussion, get the titles mixed and, in some cases, be stopped and corrected by the chair or the "victim." By courtesy the title is also extended in professional circles to Fellows of the Royal College of Physicians, but this only makes "confusion worse confounded" for the guileless American visitor.

And now by the recent decision of the courts, the holder of the last of these titles, L. S. A., may not even call himself "physician" or "surgeon," although he is entitled to practice in both capacities by his diploma.

Thus the M. D. and F. R. C. P. degrees are most highly thought of, L. S. A. least so, but between these extremes there are all varieties of grades: the men with university degrees look down upon the mere Licentiates and Members of the Royal Colleges, the physician affects to despise the surgeon and vice versa, the London M. R. C. S. sneers at the M. R. C. S. E., and all unite in looking down upon the apothecary. The origin of these various bodies is, of course, clear enough. They are belated survivals of the three distinct sources of our illustrious profession, the surgeon from the barber, the physician from the monk alchemist, the apothecary from the herbs and roots vender. The Colleges of Surgeons and Physicians and the Society of Apothecaries are simply the ancient trade-guilds of these three crafts, and, like other trade-guilds, they are beginning to show signs of having outlived their usefulness. They do no teaching whatever, but charge heavy fees for merely conducting examinations and admitting to the practice of the profession, of which they have a legal monopoly. Their management is autocratic and their actions arbitrary and unprogressive. They both support fine libraries, and the College of Surgeons a splendid museum, both pathologic and anatomic, the bulk of which, however, was bequeathed to it by JOHN HUNTER, and a large part of the remaining specimens have been presented. They both give groups of two, three or five lectures, open to their own Members and Fellows, scattered through the year, but at such irregular intervals, and so little pains are taken to notify the general profession of their dates, that they are usually delivered before a mere handful of auditors, so that in spite of the often large fee attached, it is becoming difficult to get the best men to apply for the honor of delivering them. Nearly all these, however, are supported by special funds left to the Colleges for the purpose by wealthy members of the profession. In fact, beyond their examinations, which are well conducted, they do little or nothing more for the profession in return for their very large State-secured incomes than is done by such purely voluntary professional organizations as the College of Physicians of Philadelphia and the Academy of Medicine of New York. Not only is their multiplicity confusing, but their standards are by no means uniform, although their time-requirements are the same as demanded by law. London men will assure you that the Edinburgh and Dublin examinations are much easier to pass, and there seems to be some truth in the statement, and it is the common practice among students who have failed to pass the Colleges, to try the Apothecaries' examination.

Even the conservative *British Medical Journal*, in an editorial upon the HUNTER scandal, significantly hints that the time is at hand when "one degree, if not one portal," will be insisted upon.

The Colleges and Universities should unite in the selection of one joint board of examiners, who should establish a single standard for England, Scotland and Ireland and confer a single uniform degree; preferably M.D., or at least one which should carry with it the right to use the title "Doctor." The profession are thoroughly stirred up over the HUNTER episode, and great indignation is expressed against the General Medical Council in general, and the Penal Committee in particular, for disgracing the entire profession in the eyes of the community by such petty prosecutions, especially when impersonators like "NUGENT" and quacks of all descriptions succeed in escaping their eagle vision. It is even declared that misrepresentation was resorted to by certain members of the Committee in order to get the consent of the Council to prosecute Mr. HUNTER. He was represented to be an unqualified practitioner, using that most flimsy of credentials, an American degree. And as if to bring the petty jealousy of the action into full relief, the poor man was suddenly taken ill and died while the appeal was pending.

Altogether, the episode has been a distressing and

humiliating one for both the victim and the profession, and even the newspapers are pointing to it as a sample of the jealousy and spitefulness of doctors toward each other. We can only console ourselves with the hope that some good may come of it both in the promotion of a broader and more tolerant spirit and in the reform of existing absurdities.

## CORRESPONDENCE.

### The Plea for Alcohol.

HARTFORD, CONN., Feb. 23, 1899.

*To the Editor:*—In the JOURNAL of February 11, Dr. D. E. Mattison has in a very courteous way expressed his opinion on the value of alcohol and referred to the decreasing number of persons who suffer keenly when asked to give up theories long held as facts. Some physicians, like theologians, dread the arrival of new facts and new truths, which necessitate change or readjustment. To them it is dangerous to reopen an old subject for new evidence. It is more pleasant to believe that the final truths have been reached and the last word said. Fortunately doubts, denials, and pleas for present theories are neither obstructive nor destructive, but stimulating to new inquiries; at the same time they are literal protests against old theories and welcomes for new truths. Theories of alcohol and its physiologic and medicinal action are as ancient and numerous as its defenders. No other chemic agent has been supposed to have as many and diametrically opposite effects. Recently the modern methods of research have been turned on alcohol and its current theories, and a new field of facts has appeared. The theory of its food value rests on the fact that a small percentage of alcohol is lost or absorbed in the body. The latest researches show that alcohol is almost wholly eliminated as a foreign body, especially in large doses. If a small part is a chemic food or tonic it is by inference and not apparent by any accurate tests. The tonic theory rests on the increased heart's action and appetite following its use in small doses. This is not confirmed by tests of muscular and mental activity. The stimulant theory on the same basis is disproved. Increasing the heart's action is increasing expenditure of force, always followed by reaction. This is measurable by instruments of precision, and can be expressed in units. The irritation manifest by the increased heart's action is not stimulation, because followed by reaction and exhaustion. The action of alcohol on digestion is obstructive above 4 per cent.; below that the inference is that it is helpful. But this can not be sustained by other evidence, and the question is still unsettled. Measurements of the senses both before and after the use of alcohol show a constant depression and lowering of all activities. In doses of one ounce of alcohol, a measurable diminution is apparent. Larger doses increase this effect up to partial and total paralysis. The effects of alcohol on the temperature, reducing it even when given in small doses, are demonstrated facts. Unconscious experiments on a large scale in many ways have shown that alcohol increases muscular fatigue and lessens power of endurance; in the same way experience has proved that no work requiring accuracy and steadiness or brain and nerve force can be done well under the use of alcohol. Psychologic measurements of the activities of the brain and nervous system all show a steady slowing up and lessening of force and power when alcohol is used in small doses. From an increasing variety of evidence the fact becomes more and more apparent that alcohol is an anesthetic and paralyzant. In large doses this is evident. In small doses instruments of precision make this clear. From this point of view its value in disease and in medicine can not be questioned. Clinically a rapidly increasing number of learned physicians who have no sentiment in the question report better results and lessened mortality in the treatment of many diseases without alcohol. The teachings of physiologists, or the opinions of eminent men, can not decide the accuracy of current theories; nor can we put aside the researches of psychologic and chemic laboratories or minimize their conclusions, and say they only explain the effects of large doses of alcohol, which are very different in small amounts. If alcohol is a food, tonic, and stimulant in any dose or form, the evidence of this from modern methods of research should be clear. It is the spirit of the age to question every theory and demand the reasons for its acceptance. At this bar of inquiry alcohol is proven to be an anesthetic and not a tonic or stimulant. Whatever may be ascertained in future investigations, this conclusion is fully supported by a large, increasing mass of evidence beyond all moral considerations. A critic study of cases in the practice of every physician will reveal many facts to support these conclusions, and a little experiment will show how much of the current theories of the action of alcohol are delusions. The evident decline of medical faith in alcohol is not a change of pastime or sentiment in the movement of medicine. It is the slow recognition of new truths supported by a wider range of evidence. The experience of the country physician, who finds that alcohol can be replaced by other remedies with equal and better results, and of the employers of labor, who learn by sad experience to distrust men who use alcohol, are unmistakable signs of a great awakening. To call alcohol a food, tonic, or a stimulant, is to deny the facts of science and to adhere to the theories of the past. To recognize alcohol as an anesthetic and paralyzant of nerve-cells and tissue, is to explain the most puzzling phenomena of its action, and show why its fascination is so intense and widespread. All the facts are not known, and only a few conclusions appear from the present study, but these conclusions show the trend of research and the vast fields of new facts, and wider, more exact explanation of the action of alcohol on the body.

T. D. CROTHERS, M.D.

### A Third Cataractous Family.

WHEELING, W. VA., Feb. 25, 1899.

*To the Editor:*—There is no known reason why cataract should be classed among the hereditary diseases. But cases occasionally occur which cause us to pause and think, though they may really belong to the realm of coincidence and not heredity.

In the *New York Medical Journal* of Feb. 8, 1896, I reported "A Cataractous Family," in which the mother, three daughters, and probably two sons, had double cataract at about the age of 40 years. The only other member of the family, a sister, is about 57 and has no symptom of the family failing.

In the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, of Oct. 22, 1898, I reported "Another Cataractous Family," in which my patient, aged 67 years, had double cataract; his father had double cataract when he died, at 68; a sister had double cataract and had been operated on when about 50; another sister, about 60, has a mature cataract in the right eye; and two cousins, sons of the father's brother, had double cataract when about 60 years old.

Yesterday I operated on J. C. Secrist, aged 44 years, of Sherrodsville, Ohio. He was blind from double cataract. I removed a hard, fully matured lens from the right eye, in which he had first noticed failing vision about two years ago. Within the last year he had become blind in the left eye, and the lens is evidently ripening rapidly. The patient told me his brother had gone blind from cataract when about 40 and had been successfully operated on, dying at 49 years, of an acute disease. His only other brother is now about 40 and has perfect vision, although in constant fear of cataract. His two

sisters, aged 38 and 48, have good vision. His mother died at 70 years, never having had any failure of sight, and his father is living, at 73, with good vision; but his father's sister had double cataract when 70 years old.

JOHN L. DICKEY, A.M., M.D.

### Correction in "A Few Clinical Pictures."

ANN ARBOR, MICH., Feb. 27, 1899.

*To the Editor:*—In my article published in the JOURNAL of Feb. 18, 1899, (p. 360), in the report of Case No. 5 the statement is made that "she has had local medical treatment for two years with no improvement." Since writing this, the physician who treated the patient before I saw her, and who last saw her about a year before she came to me, informs me that when the patient first came under his observation she was the subject of a marked uterine subinvolution, the fundus reaching as high as the umbilicus. I know the physician to be an accurate observer, and therefore feel it just to say that so far as this condition is concerned, "the local medical treatment" had improved the patient, as involution was complete when she came to my notice. Under report of Case No. 6, in the eighth line from the bottom, read "interrupted" instead of "inter mitted," and in the sixth line from the bottom, read "hernial" instead of "perineal."

JOHN A. WESSINGER, M.D.

## ASSOCIATION NEWS.

**American Medical Association.**—The AMERICAN MEDICAL ASSOCIATION will hold its next annual meeting in Columbus, Ohio, June 6, 7, 8 and 9, 1899. As customary in connection with these meetings, there will be an exhibit. For this purpose a special building, 190 feet long by 44 feet wide, will be erected adjacent to the State House. It will be well lighted and ventilated, and will be supplied with electric current. The rotunda of the State House will be used for registration, for a post-office, and for endorsing railroad certificates. A wide hallway leads directly from the rotunda into the exhibition hall. The Section meeting-places are all located on the square surrounding the State House. No pains will be spared to make the exhibition hall suit the convenience of those who occupy it. It is the determination of the profession of Ohio to make this meeting surpass all previous meetings of the ASSOCIATION, and all indications point to a very large attendance. The exhibitors will thus come in contact with a large number of physicians who are not delegates or permanent members of the ASSOCIATION, but who will embrace this opportunity of visiting the ASSOCIATION and of making observations of the various lines of goods represented in the exhibit.

N. R. COLEMAN, chairman, Sub Com. on Exhibits, 264 E. Town St., Columbus, Ohio.

## SOCIETY NEWS.

**Medical Association of Georgia.**—The fiftieth annual meeting of this Association will be held in Macon, Ga., on April 19, 1899. Titles of papers should be sent to Dr. R. B. Barron, Macon, Ga.

**Kalamazoo Academy of Medicine.**—At the regular meeting of the Academy, February 21, Dr. A. H. Rockwell read a paper on "Brachycardia," and Dr. Rush McNair one on "Cranial Surgery."

**Washington Microscopic Society.**—At the recent meeting of the Society, Washington, D. C., Dr. H. H. Doubleday read a paper entitled "The Psychic Life of Micro-organisms." An interesting discussion followed.

**Conference for Prophylaxis of Venereal Diseases.**—An international conference to study and discuss measures to arrest the spread of syphilis and venereal diseases, will be held in Brussels in the first two weeks of next September.—*Semaine Méd.*, February 1.

**Luzerne County Medical Society.**—At the recent meeting of this Society, Wilkesbarre, Pa., Dr. L. H. Taylor read a paper on "Mastoid Diseases." The discussion was led by Dr. McFadden. The next meeting will be held March 15, when Dr. Barton of Plains will read a paper on "Puerperal Sepsis."

**Toledo Medical Association.**—At the meeting February 24, an address was delivered by Dr. Henage Gibbes of Detroit, assisted by Dr. E. H. Troy, on "Inflammatory and Tubercular Phthisis," illustrated with lantern slides on pathologic tissue. A banquet at the University Club followed.

**National Sanitary Association.**—This association, in session in New York City, February 5 and 6, will meet in Atlanta, Ga., in October. The following officers were elected: Charles S. Benedict, New York, president; T. B. Sales, Raleigh, S. C., first vice-president; Andrew Young, Chicago, second vice-president: Eugene Monteith, Atlanta, secretary and treasurer.

**American Neurological Association.**—At a meeting of the Council of the Association held in Philadelphia recently, it was decided to hold the next annual meeting of the Association at Atlantic City, N. J., on June 14, 15 and 16. The president is Dr. James Hendrie Lloyd, Philadelphia, and the secretary and treasurer, Dr. G. M. Hammond of New York.

**New York County Medico-Pharmaceutical League.**—This new association was organized February 24, in New York City, its object being "the encouragement of operations at home where practicable, the regulation of lodge-contracting, of dispensaries, hospitals and other medical charities, and the discussion and regulation of other matters of mutual interest to the medical and pharmaceutical professions."

**International Congress of Insurance Medical Examiners.**—The first international congress of physicians connected with life and accident insurance companies will convene at Brussels, Sept. 25 to 30, 1899. Among the subjects announced for discussion, we note: Insurability in glycosuria, albuminuria, syphilis, neurasthenia, progressive paralysis, traumatic neuroses; the necessity of a uniform formula for examination, professional secrecy and the insurance companies.

**Wilson Medical Society.**—The annual meeting of this Society, an inside organization of Jefferson Medical College, formed some years ago in honor of, and fostered with tender care by Prof. J. C. Wilson, was held February 21, in Philadelphia, Pa. S. Macy Cowgill, president of the Society, acted as toastmaster, toasts being responded to by Prof. J. C. Wilson, F. X. Dercum, H. A. Hare, H. A. Wilson, W. M. L. Coplin, and E. P. Davis.

**Washington Medical Society.**—At the recent meeting of this Society, Washington, D. C., Dr. A. F. A. King read a paper on "The Mosquito and the Malarial Parasite." Dr. C. L. Allen reported a case of edema in hemiplegia and a case illustrating early degeneration of the pyramidal tracts, as shown by the Marchi method. Dr. W. Prentiss read a paper on "Bermuda as a Winter Resort." He illustrated his subject by lantern-sides and specimens of natural history.

**Lackawanna County Medical Society.**—This Society recently held its twentieth annual dinner at Scranton, Pa. C. L. Frey was toastmaster and toasts were responded to as follows: "Mythical Medicine," John C. Bateson; "Medical Education in the United States," L. S. Barnes; "The Doctor at War," Walter M. Reedy; "Medical Education Abroad," L. Wehlau; "Famous Men in Medicine," R. H. Gibbons; "Our Absent Members," D. A. Capwell; "Why Doctors Disagree," F. L. Van Sickle.

**Union Medical Association.**—The one hundred and tenth quarterly session of the Union Medical Association of Northwest-

ern Ohio was held at Akron recently, and it was decided to hold the next session in Canton, on May 9. The new officers elected were: F. H. Brannan, Canal Dover, president; G. L. Starr, Hudson, first vice-president; C. H. Goodrich, Sandyville, second vice-president; J. H. Seller, Akron, recording secretary; H. H. Jacobs, Akron, treasurer.

**Washington Obstetrical and Gynecological Society.**—The 294th meeting of the Society was held at the residence of the president, Dr. T. C. Smith. Dr. Fry read the essay of the evening, entitled, "Surgical Treatment of Unrotated Occipito-Posterior Positions. He referred to the high mortality of these cases, and recommended symphysiotomy or Cesarean section in impossible deliveries, and in cases where the child is dead, craniotomy. He referred to a case in his own practice which he had treated successfully by version. A full discussion followed, participated in by Drs. Smith, Winter, Bowen and others.

**Wayne County Medical Society.**—On the invitation of Dr. E. A. Christian, medical superintendent of the Eastern Michigan Asylum for the Insane, Pontiac, the members of the Society visited that asylum on the afternoon of February 23. There are now 1065 patients under treatment at the institution. Of these nearly all, or about one thousand, are State and county charges. Besides the main building, which is perhaps the largest single building in Michigan, there are several cottages, all of which are crowded to their full capacity, while many applications for admission are on file.

**American Academy of Medicine.**—At the annual session of the Academy, at Columbus, Ohio, three special topics are announced for discussion before the Academy: "Specialism in Medicine," "Advertising and the Medical Profession," and the "Medical Service of the Army and Navy." An effort will be made to issue a circular containing a brief synopsis of the papers to be presented, long enough before the meeting to enable those who attend to acquaint themselves with the trend of the papers, and to prepare themselves for a more profitable discussion.

**American Laryngological Society.**—At the recent meeting of the Eastern Section of the American Laryngological, Rhinological and Otological Society, held at Columbian University, with Dr. C. W. Richardson of Washington, D. C., president, in the chair, papers were read by Drs. George L. Richard, Fall River, Mass., John C. Lester, Brooklyn, N. Y., J. A. Stucky, Lexington, Ky., Thomas R. Pooly, T. P. Behrene and Woolsey Hopkins, New York City, George Ruling, Baltimore, Md., and Walter B. Johnson, Patterson, N. J. At the close of the session a dinner was served to the members at the residence of Dr. Richardson.

**Chicago Medical Society.**—A clinical meeting was held February 22. In the absence of Dr. Bevan, the president of the Society, Dr. Archibald Church presided. Dr. Weller Van Hook reported the following cases: 1, case of rectal prolapse: 2, case of rhinoplasty for lupus; 3, case of operation for deformity due to fracture of the ulna; 4, case illustrating Dr. Nicholas Senn's operation for fecal fistula; 5, case of gunshot wound of the brain, with the presentation of skiagrams; 6, case of strangulated femoral hernia of the vermiform appendix. Dr. Charles E. Manierre reported a case of nephrectomy. Dr. Reade presented, for Dr. Eisendrath, specimens from a case of cerebrospinal meningitis. Dr. Joseph L. Miller exhibited preparations of the influenza bacillus, and Dr. Joseph A. Capps demonstrated two specimens of aneurysm of the coronary artery.

**Society of Washington Ophthalmologists and Otologists.**— The January meeting of the Society was held at the Hotel Cochran, as the guest of Dr. J. J. Richardson, with the president, Dr. S. M. Burnett, in the chair. Dr. Muncaster presented a case of interstitial keratitis in a child of three years, with history. An interesting discussion followed, participated in by Drs. Richardson, Belt, Burnett, Dye and Newal. Dr. Richardson read a paper on aural reflexes, relating several experiments he had recently made on a number of persons, manifesting the susceptibility to reflexes from irritations in the auditory canal. The subject was extensively discussed, and similar cases cited by Drs. Wells, Belt, Burnett, Dye, Muncaster and Mallone.

**Detroit Medical and Library Association.**—At a recent session of this Association, Dr. Eugene Smith reported the results of his use of a new drug, mercurol, which is a nucleid of mercury. He described it as a whitish powder, soluble in hot water, and having a faintly alkaline reaction. The Doctor has used the remedy in his eye and ear practice with very satisfactory results. He said there is no immediate discomfort when a drop or two of a 5 per cent. solution is instilled into the conjunctival sac, but in about fifteen minutes a severe burning begins and lasts for an hour or more, with considerable lachrymation. He had used it in many cases of chronic conjunctivitis, blepharitis, phlyctenula, and in one case of ophthalmia neonatorum, also in several cases of small ulcers of the cornea, in all with the best results. In otitis media, both acute and chronic, he had excellent results by intratympanic injection of the solution. It had also proven of great beneficial effect as an external application to burns of the eyelids and in stitch abcess. In all respects as a germicide it has done excellent service.

**Pennsylvania State Board of Health.**—At the last meeting of the State Board of Health, held in Harrisburg, February 23 and 24, Governor Stone presided and made a talk on constant vigilance being exerted in regard to preventable diseases. There were papers on "Modern Methods in Production of Vaccin Virus," by Dr. Richard Slee, and "Sanitary Legislation," by Dr. Turnbull. Dr. H. H. Whitcomb of Norristown also read a paper on "The Organization and Administration of Boards of Health in Boroughs." The Board indorsed a bill providing that there be made a thorough investigation of the special sources of pollution of public streams, lakes, and waters used for household and dairy purposes, and providing for an appropriation of $50,000. The act providing for the use of funds in times of emergency in suppressing epidemics was also indorsed. In addition to the sum ($500) already expended in suppressing the epidemic of smallpox, the Board asked for an appropriation of $800. A resolution was passed providing for the establishment by the Government of sufficient means to place the city of Havana in a thorough sanitary condition. A copy of this resolution was transmitted to the President and to both the presiding officers of the United States Senate and House of Representatives. The following officers were elected for the ensuing term: President, William A. Stone, Governor of Pennsylvania, ex-officio: first vice-president, Crosby Gray of Pittsburg; second vice-president, M. G. Lippert of Phoenixville; third vice-president, J. B Tweedle of Weatherby; secretary, William B. Atkinson of Philadelphia.

**Philadelphia Pathological Society.**—At the last stated meeting of this Society, February 23. Dr. Wayne Babcock presented a polypoid sarcoma of the cervix and a large hydrosalpinx. In the first case he cited the authorities in proof of the claim that sarcoma of the cervix was extremely rare, Dr. Howard Kelly having found in it but a very few instances in several thousand tumors occurring in this region. Since the establishment of the Kensington Hospital for Women, Dr. Charles P. Noble was under the impression that this was the first time sarcoma of the cervix had been found. The hydrosalpinx had been removed from a patient 30 years of age, unmarried. The tumor had been found, on palpation, to fill up the entire pelvic region, and on removal was found to be separable into several cystic tumors filled with transparent fluid. In the discussion Dr. Wm. L. Coplin gave as his opinion that the tumor probably arose congenitally, and exhibited card specimens of paraplegia resulting from fatty degeneration of nerves, and also a tumor

of the filum terminal. Of the latter, he spoke of its rarity and cited several instances in which the condition had been reported quite accurately by Turner and Gowers. He thought his case the sixteenth so far recorded. Dr. M. P. Ravenel read a paper on fetal tuberculosis occurring in a calf. In this instance the fetus, which was prematurely born, was proved to be tuberculous from the cheesy nodules found and subsequently inoculated into guinea-pigs. Dr. Alfred Stengel exhibited a heart in which the cavities had become exceedingly large, the walls of which were not half the renal thickness. What was of considerable interest was a beginning aneurysm located in the walls of the left ventricle. There was considerable thickening of the walls of the coronary arteries, but there had never been symptoms of angina. Dr. William E. Hughes showed a specimen of cancer of the stomach with perforation on the posterior wall in the lesser curvature. There had been no hemorrhage. A case of cancer of the uterus with metastasis of the glands of the mesentery and intestines was also shown.

## PUBLIC HEALTH.

**Depopulation of France.**—The *Journal de Méd. de Paris* ridicules the various theories advanced to account for the decadent birth-rate in France, which it says is due entirely to the selfish foresight of married couples and the fact that the French are past masters in the art of *coit fruste*.

**School for Children with Trachoma.**—A public school for children with trachoma has been opened at Milan in connection with the Ophthalmic Institute. When school is dismissed the children go into the Institute for treatment before starting for home. Sixty pupils are enrolled in the school, although it was only arranged for fifty.—*Semaine Méd.*, February 1.

**Massage in Hungary.**—No one can practice massage who is not a physician, without a physician's orders, supervision and responsibility. Non-medical masseurs are not allowed to massage the eyes, or diseased abdominal or sexual organs. Penalty for infraction of these regulations is not to exceed fifteen days imprisonment, or a hundred florins fine.—*Deutsche Med. Woch.*, February 2.

**Health in Chicago.**—During the month of January, 1899, the number of deaths was 2498, or 1.51 per 1000, as compared to a rate for January, 1898, of 1.13 per 1000. The causes were: pneumonia 536, diseases of nervous system 251, consumption 237, bronchitis 142, diseases of the heart 141, influenza 113, diphtheria and membranous croup 82, cancer 82, acute intestinal diseases 56, typhoid fever 44, scarlet fever 26. The deaths of persons under 1 year of age numbered 470, and those between 1 and 5 years 261.

**Typhoid Fever at Yale University.**—A New Haven (Conn.) dispatch of February 4 avers that typhoid fever has broken out at Yale University, and although the cases are few, an investigation has been begun regarding the source. The Yale faculty claim that the disease is due to the presence on the green, just off the campus, of all the snow which has been dumped there from the city streets; they have unavailingly protested to the city Board of Health that the dump in question is a menace to health. As is too frequently the case, the campaign against the elements is without a plan.

**Serum Treatment in Diphtheria.**—F. Landwehr reports an epidemic of diphtheria, 217 cases, extending through the winter, which emphasizes the value of serum treatment. The type was unusually severe, *fœtor ex ore* in nearly every case. There were four deaths—two moribund when first seen; the other two dying of uremia and pneumonia within a fortnight. The rest all recovered. Preventive injections were given in 291 cases, fifteen of which succumbed later to diphtheria, but in an exceptionally mild form. . . . . A collective report from Vienna of 2637 cases of diphtheria treated with antitoxin states 1.1 per cent. of the light cases died; 2.3 per cent. of the moderately severe, and 27.9 per cent. of the severe cases—a total mortality of 12.3 per cent., although 36 of the 324 deaths were within twelve hours of first treatment. Of those treated in the first two days of the affection, 6.5 per cent. died; treated the third day, 12 9 per cent. died, and of those treated later, 25.5 per cent. Of 2352 surviving the fifth day, 1.5 per cent. had paralysis.—*Deutsche Med. Woch.*, February 2.

**Bacteriology of Influenza.**—The question whether there is a possibility of exact methods of diagnosis of influenza by the microscope, and a determination of the Canon-Pfeiffer bacillus is of such interest that the Chicago Department of Health has lately, through its bacteriologic laboratories, carried on a series of investigations to determine the facts. Dr. Wynekoop, first assistant bacteriologist of the Department, has, in the report for January, 1899, published a preliminary statement of the findings thus far made. Early in December, 1898, a very small

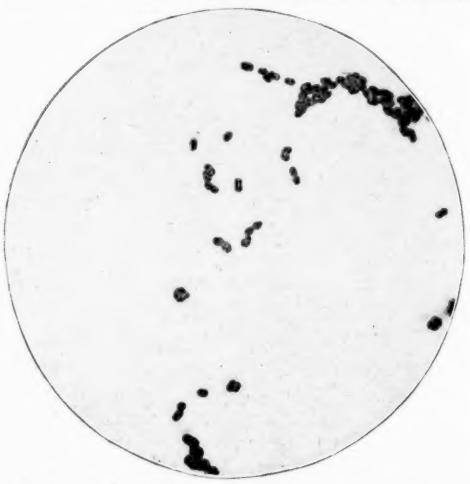

FIG. 1.—Influenza bacilli from a culture of 12 hours' incubation: × 1200.

FIG. 2.—Influenza bacilli from a culture of 12 hours' incubation: showing uneven staining; × 1800.

bacillus was found in the examination for suspected cases of diphtheria, which in its morphologic characters corresponded closely with the influenza bacillus. As influenza became more prevalent, its organisms were found more frequently, and special efforts were made to obtain from physicians samples of sputa and mucus of influenza patients, and cultures were made from the same. In many of these cultures the Pfeiffer bacillus was found almost alone, and pure cultures were made from these. The experience seems to show that a bacteriologic diagnosis of influenza can best be made by means of cultures or direct examinations of the bronchial secretions, but when direct

examinations also were made of mucus from the tonsils and pharynx, before the use of antiseptics, the results were very satisfactory, the bacilli being found in the majority of cases. This seems to give us the advantage of an earlier diagnosis. The report is accompanied with a number of plates, showing

FIG. 3.—Mixed infection, diphtheria and influenza bacilli, from a culture of 18 hours' incubation; × 1800.

FIG. 4.—Lance-shaped micrococcus (Fraenkel) from a culture of 12 hours' incubation; × 1800.

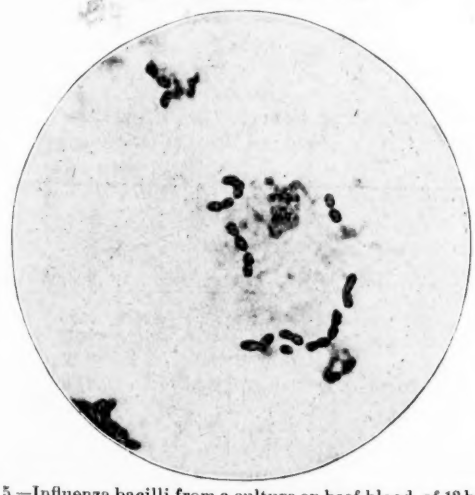

FIG. 5.—Influenza bacilli from a culture on beef blood, of 12 hours' incubation; × 1800.

the bacilli from cultures, which give an idea of its appearance. After becoming familiar with it, it is said it can be generally recognized easily, though in some cases it may at first be hard to find. Carbol fuchsin stains this bacillus very decidedly. In some cases a mixed infection was found, the bacillus of diphtheria and other disorders being also present, and this fact is of importance as showing the value of bacteriologic examinations in certain cases where the clinical symptoms are misleading or obscure. In some cases of apparent diphtheria the influenza bacillus was found almost alone, and in some other cases, while the symptoms were apparent, the diagnosis was made entirely by the bacteriologic examination. The report concludes with a note in regard to certain eye symptoms which have been observed with influenza, differing from ordinary acute conjunctivitis. An examination of this showed the presence of the influenza bacillus in large numbers in the cultures made from the discharges. Further experiments are now being carried on in this line. The plates from the report are here reproduced. The document is itself of decided interest to the members of the medical profession.

**Plague Report.**—According to the *British Med. Jour.* (February 18), the returns for the week ending February 14, in Bombay, gave 708 deaths, or 120 more than during the previous week, the plague there being considered in epidemic form. In Madagascar, it states, the plague is being stamped out, but the *Semaine Méd.* speaks quite discouragingly of the foothold obtained by the plague at Tamatave, which seems to be slowly spreading, as it has in India. There have been 278 cases with 194 deaths. Its presence in Middleburg, Transvaal, has led the Republican Government to prohibit colored persons from Asia, Mauritius, where several cases have been reported at Port Louis, and Madagascar from entering the country from the eastward, without a permit.

**Embalmers' and Undertakers' Examinations.**—The fifth of these examinations will be held March 28, in Chicago, under direction of the Illinois State Board of Health. These examinations are optional with funeral directors, embalmers and undertakers of Illinois, and those who do not apply for, or do not receive the certificate of the Board, will in no way be prohibited from conducting their business, but "the transportation of bodies dead from diphtheria (membranous croup), scarlet fever (scarlatina, scarlet rash), glanders, anthrax or leprosy, or any other disease that is dangerously communicable," will not be permitted by the Board unless such bodies have been prepared for shipment by an embalmer who has proved his qualifications to the Board and received a license.

**Foreign Physicians in Italy.**—Foreign physicians and surgeons are allowed to practice in Italy without obtaining an Italian diploma, if they confine their ministrations to foreigners, but the Italian physicians complain that the large number of physicians who come from abroad to the Riviera and other resorts frequented by strangers, monopolize the patients in a most unjust manner. To impose some restrictions the Government is taking steps to limit the privilege of practicing to physicians from countries that allow the same privileges to Italians. A circular has been sent to the representatives of Italy at foreign seats of government requesting a categoric reply to the questions: 1. Are Italian physicians allowed to practice in your country [illegible] he entire population or restricted to a foreign colony, without any further diploma being required? 2. If not, will your government authorize Italian physicians to practice according to either of the conditions mentioned, if the physicians from your country are allowed to continue to practice in Italy within the limits indicated above?

**Koch on Malaria in Italy.**—The report of Professor Koch's expedition to Italy establishes the unity of malarial infection and that the estivo autumnal fever is an etiologic whole, a genuine tertian, caused by a single well-defined parasite, and is identic with tropic malaria and with the other forms of Italian malarial infection. He was able to study 78 cases—120 in all—and the only difference between Italian estivo-autumnal and tropic malaria seemed to be that the Italian parasites were a trifle larger and more distinctly pigmented, probably due to their

being seen in advanced stages of the disease. The differences in the descriptions published by Italians and others are owing to the fact that the former only examine fresh blood, while Koch dries it on a cover-glass and treats it with stains which bring out a number of the finer details impossible without. He also found that improved staining methods (Romanowsky) showed that the crescents and flagella take the chromatin stains and that the flagella proceed directly from the chromatin, are formed of chromatin, and in fact, are not flagella but spermatozoa, as was established by comparative analysis with other parasites, for which purpose he found the study of the proteosoma of birds extremely valuable (vide JOURNAL, pp. 197 and 91). He also confirmed Ross' statements in regard to the proteosoma, finding these parasites on birds and also in the stinging gnat, in which they commence their dual life cycle. He was even able to supply a missing link by the discovery that the proteosoma turns into a worm-like creature after it has propagated, like the halteridium, which it resembles. He also observed the secondary germs of the proteosoma in the poison or salivary glands of the insect, thus completing the chain of evidence. He considers these discoveries of the utmost importance, as, owing to the close resemblance between the proteosoma and the human parasite of malarial infection, it can be accepted as certain that the malarial parasite must have an analogous course of development. He ascribes the fact that inner Rome is entirely free from malaria, while the country around it and up into the suburbs reeks with it, to the lack of vegetation within the city. Wherever the gardens begin, there the gnats and mosquitoes swarm and malaria is rife. He also calls attention to the suddenness of the onset of malarial fevers. There are but few cases in winter or spring, mostly relapses of a disease acquired during the preceding summer. But in May or early June something happens that produces an outbreak of malarial affections. He adds that it would be of the greatest importance for the study of malaria if this unknown factor could be discovered. He reports the success of methylene blue in a number of cases, stating that in given cases it can substitute quinin to advantage. The Italian Government detailed Professor Gosio to assist him in his researches, and promoted them in every way.—*Deutsche Med. Woch.*, February 2.

**Prophylaxis by Diphtheria Antitoxin.**—Dr. Allan, a London health officer, reports in *Treatment*, January 12, that he has made use of diphtheria antitoxin as an immunizing agency, in an institution for children, containing sixty inmates varying from 2 to 17 years of age. The greater number of them were quartered at night in two large, airy dormitories and the classrooms occupied during the day were also large rooms. Early in February, 1898, one of the children, during a visit to a friend, was exposed to infection from a case of diphtheria, and on returning home on the same day developed the disease herself and communicated it to the girls in the beds on each side of her own. These three cases were removed to a hospital and no further cases appeared until a few days after their return home in the beginning of March. By March 23, five cases had occurred in the same dormitory and a bacteriologic examination of the throats of the three former cases revealed the fact that two of them contained typic diphtheria bacilli. Up to April 29 several other children developed the clinical symptoms of diphtheria and several more had inflamed throats without membrane. On April 29, at Dr. Allan's suggestion, a protective dose of antitoxin was given all round, and from that day, although the organisms persisted in the throats, there were no more cases of diphtheria or of sore throat. Of the 60 children, 9 only never gave evidence of infection, 14 were in hospital, leaving 34 children at home in addition to the first three returned from hospital. As time went on the organisms in these thirty-seven throats became less and less typic in form, and by June 15 all had disappeared. The immunizing dose of antitoxin is from 100 to 300 units, according to age, and the immunity thus produced ordinarily lasts for a period of at least four weeks.

**Health Reports.**—The following cases of smallpox, yellow fever, cholera and plague have been reported to the Supervising Surgeon-General of the U. S. Marine-Hospital Service for the week ended Feb. 25, 1899:

SMALLPOX—UNITED STATES.

California: Los Angeles, February 17, 31 cases in all since date of outbreak, 7 deaths. Origin believed to be Arizona; 25 cases in hospital. Sacramento, February 1–17, 1 case; San Diego, February 19, 1 case, 1 death; San Francisco, February 1–17, 1 case.

District of Columbia: Washington, February 15–23, 6 new cases, 21 in all.

Kansas: Peabody, February 16, 1 case; there have been 56 cases in 15 families, with 7 deaths.

Missouri: Carroll County, February 13, 33 cases, 5 deaths; St. Louis, February 13, 15 cases, 2 deaths.

North Carolina: Chowan County, February 16, 3 cases; Columbus County, 2 cases from Sumter, S. C.

Ohio: Cincinnati, February 16, 2 cases at Marine Hospital; Columbus, February 1–9, 10 cases of varioloid.

Pennsylvania: Philadelphia, January 23 to February 11, 1 case; Bedford County, January 23 to February 11, 1 case; Liberty Township, January 23 to February 11, 3 cases.

Tennessee: Jackson, Madison County, February 14, 7 cases; Memphis, February 11–16, 6 cases.

Texas: Laredo, February 2–11, 12 cases, 16 deaths.

Virginia: Alexandria, February 8–23, 24 cases; Norfolk, February 13–22, 70 cases; Portsmouth, February 4–18, 15 cases.

SMALLPOX—ON VESSELS.

Japanese S. S. *America Maru*, from Yokohama for San Francisco, via Honolulu, January 25, 2 cases.

United States S. S. *Costa Rica*, from Hongkong for San Francisco, 2 cases at Hongkong; arrived February 9.

Steamer *Hatteras*, Smithfield, Pa., for Norfolk, 1 case.

Steamer *Lucy*, from North Carolina for Norfolk, Va., February 7, 1 case.

Sloop *Mary Pace*, James River for Portsmouth, Va., February 10, 1 suspected case.

SMALLPOX—FOREIGN.

Brazil: Rio de Janeiro, December 31 to January 6, 10 cases, 4 deaths.

Egypt: Cairo, January 19–26, 1 death.

England: South Shields, January 22–28, 1 case.

France: Paris, January 28 to February 4, 1 death.

India: Bombay, January 17–24, 2 deaths; Singapore, December 1–30, 13 deaths.

Mexico: Chihuahua, February 4–18, 2 deaths; Ciudad Porfirio, Diaz, February 11–18, 6 cases; Mexico, February 5–12, 2 cases; Nuevo Laredo, February 11, 40 cases; Vera Cruz, February 2–16, 1 death.

Russia: Odessa, January 28 to February 4, 4 cases, 1 death: Warsaw, January 22–28, 3 cases.

Turkey: Constantinople, January 23–30, 8 deaths; Smyrna, January 15–22, 3 deaths.

YELLOW FEVER—FOREIGN.

Brazil: Rio de Janeiro, December 30 to January 6, 16 cases, 11 deaths.

Mexico: Vera Cruz, February 2–16, 3 deaths.

CHOLERA—FOREIGN.

India: Bombay, January 18–24, 3 deaths; Calcutta, January 1–14, 113 deaths; Madras, January 14–20, 3 deaths.

PLAGUE.

India: Bombay, January 17–24, 456 deaths; Calcutta, January 7–14, 2 deaths.

## BOOK NOTICES.

**Treatment of Diseases by Physical Methods.** By THOMAS STRETCH DOWSE, M.D., F.R.C.P., etc. New York: E. B. Treat & Co. 1899.

This is a revised edition of the author's former work entitled, "Lectures on Massage and Electricity in the Treatment of Disease," altered as to title and brought thoroughly up to date by new additions and revisions. One important chapter on the Schott-Nauheim treatment of cardiac weakness is here included, that will doubtless prove valuable to those who consult it. The author lays special stress on the improved methods of massage that have come into use within the last twelve

years, the chief difference being that the movements are more vibrating in character. Pelvic massage, the Thure-Brandt method, is passed over very briefly in a quotation from Graham, but as this is a sort of specialty by itself, the failure of this work to be perfectly up-to-date in this regard is perhaps of less importance. It would have, nevertheless, been well if it had been rounded out with some more facts on this particular subject, from its already extensive literature. As a general work for the medical practitioner the book is to be recommended. The index is rather deficient, but in other respects, fullness, clearness of style, illustrations, etc., it meets most reasonable requirements.

**Why I Am a Vegetarian.** By J. Howard Moore. Paper. Pp. 44. Chicago: Frances L. Dusenberry. Price, 25 cents.

This booklet is of interest as indicating a point of view and the tendencies of those who adopt it. The author is a zoöphilist vegetarian; he uses no scientific arguments in favor of his thesis, but is, especially as he warms up to his subject, abusive and intolerant to those that may disagree with his dietetic opinions. "Christian cannibals," "ghoulish clowns of science," are samples of some of his utterances. Like Marryat's boatswain, he begins with moderation, but becomes vituperative as his remarks progress. Vegetarianism is apparently just now being taken up with more vigor; its propaganda is more active than for some time past. Such little works as this are evidence of the fact, but they do not convey altogether favorable impressions of the temper and judicial mindedness of their writers.

**Transactions of Luzerne County Medical Society.** Vol. vi. Paper, pp. 217. Wilkesbarre, Pa.: 1898.

This volume of transactions is for the year ending Dec. 31, 1898, and contains the following papers: President's address, "Uses of Saline Solution," "Pathology of Ovarian Cysts," "Internal Obstructions," "Local Anesthesia," "Insomnia," "Bronchopneumonia in Childhood," "Diphtheria," "Syphilis," "Cholelithiasis," "Bread," "Schleich Mixture for Anesthesia," "Notes on Tumors," "Case of Neurosis of Humerus," "Gunshot Wounds," "Water Supply," "Dysentery," "Prevention of Diphtheria," "Chloroform in Labor," "Alcoholism," "Prostatic Retention."

**Transactions of Medical Society of North Carolina.** Cloth, pp. xlix, 173. Winston, N. C.: 1898.

This volume contains the proceedings of the forty-fifth annual meeting, held at Charlotte, N. C., May 3-5, 1898. Besides lists of officers, members, etc., there are papers on the following subjects: "Two Pioneer Heroes in Surgery and Gynecology," "The Under Side of Things in a Doctor's Life," "Tobacco Habit as a Cause of Disease," "Suggestions on Prevention of Tuberculosis," "Meddlesome Gynecology," "Three Interesting Cases of Obstetrics," "Chemistry of the Stomach," "Veratrum Viride," "Country Surgeon and His Work," "Radical Cure of Hernia," "Shawl-Pin in the Trachea," "Expert Witnesses," "Excision of Gall-Bladder for Impacted Stone," "Treatment of the Umbilic Cord Without Ligature," "A Plea for Conservatism in the Treatment of Abortion," and others.

**Diseases of the Eye.** By G. E. de Schweinitz, A.M., M.D., professor of ophthalmology in the Jefferson Medical College; professor of diseases of the eye in the Philadelphia Polyclinic, etc. With 265 illustrations and two chromo-lithographic plates. Pp. 696. Philadelphia: W. B. Saunders. 1899. Cloth, $4 net; sheep or half morocco, $5 net.

In this third edition new matter is added and the greater part of the work is thoroughly revised, especially the articles on "Tumors of the Choroid," "Retinitis Carcinomata," "Hereditary Optic Nerve Atrophy," "Orbital Optic Neuritis," and the chapter on operations. The bacteriologic relationship to many of the ocular diseases is emphasized. All through the work there is evidence of the desire of the author to keep the book thoroughly up to date.

**The Phonendoscope and Its Practical Application.** By Prof. Aurelio Bianchi. American Edition. Cloth, pp. 77. Illustrated. New York: Geo. P. Pilling & Son. Price 50 cents.

**Merck's 1899 Manual of the Materia Medica.** A ready-reference pocket manual for the physician and surgeon. Leather, pp. 192. New York: Merck & Co., 1899. Price $1.

**Thirteenth Annual Report of Births, Marriages and Deaths** in Michigan, for 1896. Edited by Cressy L. Wilbur, M.D. Cloth, pp. 188. Lansing: 1898.

## Pamphlets Received.

Abdominal Section on Patient with Exophthalmic Goiter; Shall Absorbable Ligatures and Sutures be Employed in Hysterectomy. By Chas. P. Noble, Philadelpia. Reprints.

Albuminuria During Pregnancy, Without Convulsions of the Mother; Diabetes Mellitus and Carcinoma Uteri; Torsion of Pedicle of Ovarian Tumor. By H. T. Kreutzman, San Francisco. Reprints.

Anthrax, a Case of. By T. S. Dabney, New Orleans, La. Reprinted from New Orleans Med. and Surg. Jour.

Antitoxins for Tuberculosis, Preparation and Effects of. By E. L. Trudeau and E. R. Baldwin. Reprinted from Am. Jour. Med. Sci.

Appendicitis a Surgical Disease. Is? By Carl Beck, New York City. Reprinted from N. Y. Med. Jour.

Appendicitis, Early Treatment and Indications for Operation in. By W. M. Harsha, Chicago. Reprinted from Jour. Am. Med. Ass'n.

Association of American Anatomists. Reports. Paper, pp. 58. Reprinted from Proc. of the Ass'n.

Bronchitis, Acute, Treatment of; Home Treatment of Pulmonary Tuberculosis; Modern Methods of Diagnosis; Preventive Treatment of Children Predisposed to Pulmonary Tuberculosis; Renal Insufficiency. By John A. Robison, Chicago. Reprints.

Carcinoma of Gall-Bladder; Elimination of Bacteria by Liver, etc.; How Soon Do Bacteria Entering Portal Vein Become Disseminated. By Gustav Fütterer, Chicago. Reprinted from Medicine.

Caries of Teeth and Diseases of Stomach; Diarrhea and Bacteria; Early Diagnosis of Cancer of Stomach. By C. D. Aaron, Detroit, Mich. Reprints.

Cataract Operations, etc.; Injuries of Eyelids and Eyeballs; Iritis, etc. By L. Webster Fox, Philadelphia. Reprints.

Clinical Memoranda; Diagnosis of Malaria. By A. R. Edwards, Chicago. Reprinted from Jour. Am. Med. Ass'n.

Deficient Excretion from Kidneys; Treatment of Hereditary Syphilis. By L. D. Bulkley, New York City. Reprints.

Ear Diseases as a Specialty. By Emil Amberg, Detroit, Mich. Reprinted from Physician and Surgeon.

Entotic Sound Perceptions. By Lewis S. Somers, Philadelphia. Reprinted from Medicine.

Epidemic of Fever at Key West, Fla. By John W. Ross, U. S. N. Reprinted from Med. Record.

Experimental Researches About Mixed Infection in Chronic Pulmonary Tuberculosis. By C. Fisch, St. Louis. Reprinted from St. Louis Medical Review.

Fractures of Neck of Femur, Mechanical and Surgical Treatment of. By A. J. Gillette, St. Paul, Minn. Reprinted from Northwestern Lancet.

Healing With or Without Drugs. By Anagaraca Caskadananda, Washington, D. C. Paper, pp. 24. Washington: C. W. Smith, 1899.

Heart, Concentric Displacement to Right; Landry's Paralysis, Case of. By C. L. Green and J. F. Rothrock, St. Paul, Minn. Reprints from Phila. Med. Jour.

Heart Disease, Treatment of by Schott Method. By C. L. Greene, St. Paul, Minn. Reprinted from Jour. Am. Med Ass'n.

Infection from Hands in Phthisis. By E. R. Baldwin, Saranac Lake, N. Y. Reprinted from Trans. Am. Climatological Ass'n.

Insane, Diseases of Lungs Among. By H. A. Tomlinson, St. Paul, Minn. Reprinted from Trans. Am. Medico-Psycho. Ass'n.

Lachrymal Obstructions, Sources of Failure in Treating. By Leartus Connor, Detroit, Mich. Reprinted from Jour. Am. Med. Ass'n.

Leprosy of the Bible, Nature of. By Jay F. Schamberg, Philadelphia. Reprinted from Phila. Polyclinic.

Manual of Massotherapy. By W. E. Forrest, New York City. Paper, pp. 88. Illustrated. New York: Health Culture Co., 1898.

Orbital Injury from Contre-Coup; Protargol as a Substitute for Nitrate of Silver in Ophthalmia. By. F. E. Cherry, Boston, Mass. Reprints from Boston Med. and Surg. Jour.

Poisonous Plants of the United States, Thirty. By V. K. Chestnut, U. S. Dept. of Agriculture, Farmers Bulletin, No. 86. Paper, pp. 32. Illustrated. Washington: 1898.

Powers of Municipalities: A Discussion. By A. R. Foote. Paper, pp. 80. Indianapolis: C. E. Hollenbeck.

Prophylaxe der Sepsis bei Laparotomien und bei Eingriffen am Uterus. By B. Credé, Dresden. Reprints from Monats. f. Geburts. u. Gyn.

Quinin in Malarial Hemoglobinuria. By Albert Woldert, Philadelphia. Reprinted from Med. News.

Remedial Measures Proposed for Pennsylvania. By Samuel Wolfe. Philadelphia. Reprinted from Trans. 25th Nat. Conf. Charities and Cor.

Reminiscences of a European Trip. By W. G. A. Bonwill, Philadelphia. Reprinted from Internat. Dental Jour.

Report of Arkansas State Lunatic Asylum. Paper, pp. 32. Little Rock, Ark.: 1898.

Report of Board of Health, Lowell, Mass., 1898. Paper, pp. 84.

Report of Delaware State Hospital at Farnhurst. Paper, pp. 68. Illustrated. Wilmington, Del.: J. M. Rogers, 1898.

Report of Health Officer of Coldwater, Mich., 1898. Paper, pp. 11.

Report of Illinois Northern Hospital for the Insane, Elgin, Ill. Paper, pp. 104.

Report of Kensington Hospital for Women, Philadelphia. Paper, pp. 31. Illustrated.

Report of Longview Hospital, Carthage, Ohio. Paper, pp. 58.

Report of Loomis Sanitarium for Consumptives, 1898. Paper, pp. 35. Illustrated. New York: 1898.

Report of Maryland Lunacy Commission. Paper, pp. 55. Baltimore: 1898.

Report of Maryland Hospital for Insane. Paper, pp. 54. Baltimore: 1899.

Report of Second Hospital for Insane, Sykesville, Md. Paper, pp. 34. Baltimore: 1898.

Report of State Board of Medical Examiners of New Jersey, 1898. Paper, pp. 32. Trenton, N. J.: 1899.

Report of University Hospital, Kansas City, Mo. Paper, pp. 15. Illustrated.

Serotherapy in Tuberculosis. By J. E. Stubbert, Liberty, N. Y. Reprinted from Trans Am. Climatological Ass'n.

Suppuration of Middle Ear. By A. D. McConachie, Baltimore, Md. Reprinted from Maryland Med. Jour.

Syphilis Among British Troops. By Geo. Ogilvie, London. Reprinted from British Jour. of Derm.

Thyroid and Malarial Infection Combined. By J. P. Lyon, Buffalo, N. Y. Reprinted from Am. Jour. Med. Sci.

Tuberculosis of Bladder. By W. M. L. Coplin and O. Horwitz, Philadelphia. Reprinted from Jour. Cut. and G.-U. Dis.

Twentieth Century Medico-Biologic Science: What Is Life? By Joseph Clements, Kansas City, Mo. Reprints from Charlotte Med. Jour.

Winyah Sanitarium, Clinical Report from. By Karl Von Ruck, Asheville, N. C. Paper, pp. 21.

World Almanac and Cyclopedia, 1899. Paper, pp. 528. Maps. New York City: N. Y. World, 1899. Price 25 cents.

### Trade Pamphlets.

A New Form of Quinin. R. W. Gardner, New York City.

Catalogue of Medical Works. D. Appleton & Co., New York City.

Dolomol Compounds. Pulvola Chemical Co., New York City.

Dysmenorrhea. Rio Chemical Co., St. Louis, Mo.

Kryofine; reprints on. C. Bischoff & Co., New York City.

Oakland Heights. Illustrated. Asheville, N. C.

Rational Treatment of Gastric and Intestinal Disorders. Charles Marchand, New York City.

## NECROLOGY.

CORNELIUS A. LOGAN, M.D., Chicago, died in Los Angeles, Cal., January 30. He was from a prominent family, his father being the celebrated Cornelius Logan who wrote "Solon Shingle" and several other popular comedies. His two sisters were long prominent, and he was also a cousin of General John A. Logan. Dr. Logan was born in Deerfield, Mass., Aug. 24, 1832. By President Grant, he was appointed Minister to Chili, where he remained for several years, and was again appointed to the same mission by President Garfield. In the controversy over the war debt between Chili and Peru, Dr. Logan was selected to settle that dispute, a delicate task, which he performed so satisfactorily as to win the approval of both governments.

ALBERT REYNOLDS, M.D., Clinton, Iowa, died February 23 at the age of 62 years. In October, 1861, he enlisted in the Ninety-second New York Volunteers; in July, 1862, was mustered in as steward of the Baltimore Hospital, afterward serving in the hospital in Washington, Georgetown and Baltimore. Later he went to New Orleans and was there during Banks' expedition, and was a clerk in the medical director's office, department of the Gulf, until September, 1863, when he was appointed assistant-surgeon of the Eighty-eighth Colored Regiment, United States Volunteers, serving in this capacity until 1864. From 1872 to 1881 he was superintendent of the Hospital for the Insane, Independence, Iowa. He also, at various times, delivered courses of lectures in the medical department of the State University, on diseases of the brain. He was a member of the Clinton County Medical Society, Iowa State Medical Association and the AMERICAN MEDICAL ASSOCIATION.

ROBERT PATTERSON HARRIS, M.D., Philadelphia, Pa., died February 20 of apoplexy. He was the son of Dr. Wm Harris, and was born in Chester County in 1822. He was graduated from the University of Pennsylvania in 1843, and for a year studied in the Demilt Dispensary, later completing his studies in Paris. For several years Dr. Harris was physician to the Franklin Reformatory Home. He spent many years in compiling statistics and was considered an authority on Cesarean section and abdominal operations. Probably his greatest work was in editing "Playfair's Midwifery." For many years he acted as vice president of the Pennsylvania Horticultural Society, in addition to his other duties. He was a member of the Philadelphia Gynecological Society.

GEORGE H. STONE, M.D., University of Georgetown, Washington, D.C., 1868, of Savannah, Ga., died there February 19. He was regarded as an authority upon yellow fever.

DAVID L. REEVE, M.D., New York University, 1845, died February 25 in Jersey City, N. J., where he began practice in 1858. He was born in New York City in 1822 and is survived by two sons.

WILLARD AVERY HEACOCK, M.D., College Physicians and Surgeons, New York, 1892, died at his home in New York City, February 24, aged 32 years. He contracted diphtheria from a patient ten days preceding his own death. A wife and two children survive him.

T. J. ALLEN, M.D., Shreveport, La., February 16, aged 70 years . . John C. Benham, M.D., Castleton Medical College, Vt. (now extinct), 1837, died at his home in Hudson, N. Y., February 19, in his 83d year. . . Thomas Gibson, M.D., Radford, Va., February 1 . . A. J. Kantz, M.D., College Physicians and Surgeons, Keokuk, Iowa, February 12, in Berrysburg, Pa., aged 61 years . . Thomas M. Kyle, M.D., Aurora, Ind., aged 57 years . . William Penn McMillan, M.D., an alumnus of the N. O. School of Medicine (now extinct) of Biloxi, Miss., January 27, aged 68 years. . . Ella M. Patton, M.D., Quincy, Ill., February 16, aged 38 years . . John Rea, M.D., Newcastle, Ind., February 23, aged 80 years . . John B. Sweetland, M.D., Edwardsburg, Mich., aged 65 years . . Norman Teal, M.D., Kendallville, Ind., Rush Medical College, 1866, aged 69 years . . John J. Thompson, M.D., Sullivan, Ind., aged 78 years . . William T. Russell, M.D., University of Pennsylvania, 1850, Spartansburg, S. C., February 23, aged 72 years.

DEATHS ABROAD.—Sir John Struthers, M.D. LL.D., February 24, vice-president of the Royal College of Surgeons, Edinburgh, and examiner in anatomy. He was 76 years of age. . . Dr. William Rutherford, F.R.S., professor of physiology in the University of Edinburgh since 1874, and author of scientific treatises. . . Thomas Cooke, F.R.C.S., Eng., M.D. and B.Sc., Paris, founder of the London School of Anatomy and Physiology, and a contributor to English and French literature. . . Dr. Joseph Maschka, professor of medicine, University of Prague. . . Dr. G. Vlakovich, professor of anatomy, University of Padua. . . Dr. Pedro Izquierdo, professor in the University of Madrid. . . Dr. August Socin, professor of clinical surgery, University of Basel. . . Dr. Joseph Finger, emeritus professor of clinical medicine at Lemberg. . . Dr. Thomas, professor in the Medical School of Rheims, aged 73 years. . . Dr. Emil Schiff, well known as a popularizer of the researches of Helmholtz and Dubois-Reymond, and for his reports of medical and scientific congresses, aged 50 years. . . C. Wolffhugel, professor of hygiene aud bacteriology at Göttingen. . . Prof. K. Schönlein of the Zoölogic Station at Naples.

## MISCELLANY.

**Dr. T. H. Hirschfield.**—Dr. T. H. Hirschfield, Milwaukee, Wis., has returned from a trip through the Southern States and Mexico.

**Indiana Medical College.**—The medical college building, recently burned out, at Indianapolis, has been rebuilt and reopened for college work.

**Rudolph Kobert.**—Prof. Rudolph Kobert, superintendent of the phthisis sanatoria at Göbersdorf, Silesia, has been appointed professor of pharmacology at Rostock.

**Dr. William F. Jenkins.**—Governor Roosevelt has appointed Dr. William F. Jenkins, New York City, as member of the New York State Board of Health.

**Detroit Health Commissioner.**—Dr. John L. Irwin, Detroit, has been appointed, by Governor Pingree, as Detroit Health Commissioner, to succeed Dr. Longyear.

**Dr. T. P. Stanton.**—At the recent meeting of the Southwestern Iowa Medical Society, Dr. T. P. Stanton, Chariton, Iowa, was elected president.

**New Pathologist at Cambridge.**—Dr. German Sims Woodhead has been elected professor of pathology, to succeed the late Dr. Kanthack, in the University of Cambridge, England.

**Hygienic Expert.**—Dr. M. A. Veeder of Lyons, N. Y., has been appointed by the State Board of Charities to assist in the sci-

entific investigation of hygiene in certain of the State's public institutions.

**Reception to Medical Students.**—The faculty of the medical and dental departments of the University of Maryland, Baltimore, tendered a reception to nearly five hundred students in the lecture room of the law department, February 22.

**Membranous Enteritis.**—In the fourth and fifth lines of the editorial on "Membranous Enteritis," page 436 of the JOURNAL for February 25, for "secondary necrosis" read "*secretory neurosis.*"

**Foreign Items.**—Professor Helferich of Greifswald has been transferred to Kiel. . . Prof. K. Lohmeyer of Göttingen recently celebrated his golden jubilee. . . The Medical Clinic at Leipsig celebrates its centennial in April.

**University of Buffalo.**—A reunion of the medical alumni of the University of Buffalo was held in the college building, Buffalo, N. Y., February 22. Addresses were made by Drs. Matthew D. Mann, Lusk of Warsaw, Frederick Peterson of New York and W. W. Potter of Buffalo.

**Virchow Honored.**—The Royal Academy of Sciences at Berlin has bestowed the handsome gold Helmholtz medal on Virchow. The endowment for this medal was completed in 1892 in honor of Helmholtz' seventieth birthday. The recipients have been Helmholtz, Du Bois Reymond, Weierstrass and Lord Kelvin.

**Pineal Gland and Abnormal Growth.**—A tumor of the pineal gland was noted at the necropsy of a boy 4½ years of age, whose skeleton had grown in one year to that of a boy of 7 or 8 years, while the penis, scrotum and testes were the size usual at puberty.—*Vienna Klin. Woch.*, February 9.

**Prolapse of Uterus.**—Duncan (*British Med. Jour.*, February 18) reports a case of prolapse of the uterus in a girl 16 years of age, it being in this point unique. The case is likewise of interest from the fact that she was nulliparous, and there was no congenital defect in the pelvic organs. Ventral fixation was resorted to.

**Salesroom Burned.**—Wm. R. Warner & Co.'s salesroom, offices and storerooms, at 1228 Market Street, Philadelphia, were recently entirely destroyed by fire. Their laboratories will, however, fill all orders, with as little delay as possible, and their Chicago branch is also prepared to supply all demands that may be made on it.

**Micro-organisms in Sea Water.**—Duflocq asserts that micro-organisms retain all their vitality and virulence in sea water, evidenced by subsequent inoculations in animals (bacillus of typhus, psittacosis, choler vibrio, etc.); also that the microbes continue to secrete their toxins in sea water.—*Semaine Méd.*, February 1.

**Leucocytosis from Purgatives.**—De Renzi and Boeri have found that calomel, sublimate, magnesia sulph., podophyllin and croton, introduced into the intestines, cause an increase in the number of leucocytes throughout the system, but they were unable to prove any protective action against infective diseases, from this leucocytosis.—*Munich Med. Woch.*, January 17.

**Iodin Exanthem on the Stomach.**—Neumann reports a case of fatal nephritis in a woman of 30 years, who had taken potassium iodid, producing an exanthem on the skin, face and members. At the necropsy the same exanthematous lesions, ulcerations and efflorescence were discovered on the mucosa of the stomach, in the pyloric region, evidently due to the iodin, the first case of the kind on record.—*Vienna Klin. Woch.*, February 9.

**Necropsy Forbidden.**—The husband of a woman who had died at the gynecologic clinic at Rostock refused his consent to have a necropsy made. In spite of this refusal, small pieces were removed from the heart and kidneys and the organs replaced. The husband sued the chief of the clinic, who was condemned to pay damages of 150 marks, and an appeal to a higher court merely confirmed the judgment.—*Presse Méd.*, February 8.

**Vesical Calculi on Foreign Bodies.**—Heresco adds another to the fourteen cases on record in which a calculus formed around a splinter or bone that had worked its way through the vesical wall from a suppurated focus in the pelvic bones. Gouyon also reports a couple of cases in which after protracted suppuration after the extirpation of an annex or operation for inguinal hernia, silk threads had suppurated through into the bladder and resulted in the formation of stones.—*Cbl. f. Chir.*, February 11.

**Empyema of Maxillary Sinus.**—Saint-Hilaire reports two cases of violent epistaxis treated by tamponning the anterior and posterior nasal cavities. After a few days or weeks fetid pus was found in the maxillary sinus, the compression of the tampons evidently having caused the still flowing blood to find its way into the sinus, where it putrefied and caused an empyema. He urges treating epistaxis, which is usually due to some lesion of the anterior part of the septum, by some other means than tamponning.—*Revue de Laryng.*, xix, No. 32.

**Unusual Localization of Diphtheria Bacillus.**—A girl of 10 years was received at Mosler's clinic with pronounced diphtheritic ulcerations and membrane formation on the external genitals, with intense pain on urinating, and a mild form of diphtheritic manifestations in the throat appearing later. The local diphtheria was much more severe than the general. Pure cultures of the Loeffler bacillus were also derived from a small abscess on the thumb, refuting the theory that the association of pyogenic cocci is necessary for pus formation by the diphtheria bacillus. The child's cousin and mate was also affected with similar manifestations at the same time.—*Deutsche Med. Woch.*, February 2.

**Blood Pressure and Contractility of Bladder.**—Guyon has called attention to the frequency of arteriosclerosis with hypertrophied prostate, and the variability of the condition of the pulse. To explain the differences in the behavior of the pulse, the contractility of the bladder was studied in connection, and it was found that the arterial pressure is highest with normal contractility and lowest when the bladder contracts defectively or not at all. It is possible that the contractibility of the vesical muscles and the tonus of the muscular walls of the arteries proceed from a general "hyposystolia" of the unstriated muscular system.—*Cbl. f. Chir.*, February 11.

**Mechanic Vibration for Sclerosis of the Ear.**—Inspired by the familiar fact that deaf persons sometimes hear better in a jarring train or on a bicycle, Dundas-Grant has been successfully treating certain cases of deafness due to sclerotic processes in the middle ear on a diathesic basis of rheumatism, gout, osteo-arthritism or syphilis, with mechanic vibration applied to the spine. "The improvement was frequently sufficient to restore the subjects to general conversation from which they had long been isolated by their infirmity." For a five minutes' séance he uses a small motor connected with the electric-light service, with an eccentric on the axle. A curved strip of tin fits along the spine and the apparatus is held with a "teapot" handle.—*Revue de Laryng.*, xix, No. 35.

**Medical "Tribunals of Honor" in Prussia.**—German physicians have long been seeking a means to punish unworthy colleagues without detracting from the dignity of the profession, and the government has acceded to their appeal and established the so-called tribunal of honor in each district, with a supreme court of appeal appointed by the emperor. These tribunals are to pass judgment upon derelictions from professional duty, honor and medical dignity, with penalties ranging from warnings and reprimands to a fine of 3000 marks and suspension or withdrawal of the privileges of the local medical society. The tribunal has no jurisdiction over members of the profession

occupying official positions or connected with the army or navy, and no one can be indicted for his scientific, political or religious views. The *Deutsche Med. Woch.* of February 2 contains the full text of the famous ordinance.

**Cirrhosis of Liver in a Child.**—In the *Glasgow Med. Jour.* for February is reported a case of cirrhosis of the liver in a child of 6 years, admitted to the ward in a moribund condition, and dying two and one-half hours later. There had been the gradual swelling of the abdomen, ascites, diarrhea, temporary jaundice, splenic and liver enlargement, cyanosis and involvement of the respiration. Microscopic examination of the liver showed a pronounced cirrhosis, mostly of the multilobular type, though in places also monolobular. As an infant he had been given whisky in teaspoon doses for bronchitis, and having acquired a taste for it had never afterward been refused his "little drop" when the parents were thus "refreshing themselves (and this seems to have been a not infrequent proceeding)." Medical literature records only about one hundred and thirty cases of this disease in children.

**Derivation of Sugar from Albumin.**—P. Mayer has succeeded in deriving a sugar (a hexose, $C_6H_{12}O_6$) from the yolk of egg. Its osazone is levorotatory; fuses at 203 degrees; does not dissolve in cold absolute alcohol nor in hot water; crystallizes in needles arranged in the form of sheaves, and in every respect is identic with that of glucazone. Comparing it with other sugars, all are excluded except glucose, mannose and levulose. Blumenthal and Eichholtz have derived a similar sugar from the white of egg, and Mayer considers the fact now fully established that the albumin molecule contains a hexaglucose belonging to the group of carbohydrates. It is even probable that the highly complex albumin molecule contains more than one member of the carbohydrate group, as Weiss recently derived a carbohydrate from the albumin of the white of egg, that has the characteristics of methylpentose.—*Deutsche Med. Woch.*, February 9.

**Hospitals.**—The Methodists of Chicago expect to replace the present Wesley Hospital with a new building to cost $200,000. Of this sum, $150,000 has already been pledged . . Trustees of Michael Reese Hospital, Chicago, have decided to expend $50,000 in improvements. This hospital is also the recipient of an automobile ambulance, the gift of five of Chicago's business men . . The new surgical ward and bacteriologic laboratory of the Boston City Hospital was opened for public inspection, February 20 . . The Senate of Utah has passed a bill providing for the erection of a hospital for the State School for the Deaf, Dumb and Blind, at Ogden, Utah, and appropriating $3500 therefor . . The Methodist Episcopal (Seney) Hospital, Baltimore, has received $5000 from the late J. J. Vernier to endow a bed in perpetuity.

**Testing of Children's Strength.**—A scientific investigation of the physical strength of the Chicago school children is to be undertaken by the Board of Education of this city, and the results which they obtain will be used as a standard for the treatment of pupils as to their capacity for mental endurance and physical exercise. It is thought that the results will be very important and serve to revolutionize the methods which are now in vogue. The theory of the test is to determine what is known as the "fatigue period" of a child, or that period of its life at which its energies are at the lowest ebb and, therefore, the time when its school work should not be pressed. The scheme will be put in operation at one of the largest elementary schools, in which at least 1000 children are taught. The pupils will be weighed and measured, and will be examined, for the purpose of determining their physical condition. A test will then be made of the strength and endurance powers of the muscles of the child. This will be done by the special psychologic instrument called the "ergograph," adapted for the purpose.—*Scientific American*, February 18.

**Writer's Angina.**—Musgrove (*Lancet*, 1899, i, No. 3914, p. 157) designates as writer's angina attacks occurring in individuals compelled to write much, rapidly and under stress, and characterized by precordial pain, with a feeling of highness and oppression about the chest and a sensation as if the heart were going to burst, followed by a number of violent pulsations. The attacks occur under the strain of writing and terminate with its cessation. The symptoms are attributed to the mental concentration, the posture and the cramping of the muscles and the state of the respiration, which, it is conceived, result in distension of the right side of the heart, increased cardiac activity and vasomotor constriction of the coronary arteries, with temporary malnutrition of the heart. The condition may lead to cardiac irritability in those otherwise healthy, and it may aggravate existing dilatation, as well as the symptoms of valvular disease. No other treatment is required than avoidance of the cause.

**The Widal Reaction.**—While different methods of technic have been devised for the determination of the Widal reaction, it is very generally known that the dried blood specimen is not always free from a certain element of doubt. In fact, it has been demonstrated in not a few instances to have given inaccurate results. The Widal reaction is a method which, if developed, should bring about a reaction regarding the different perplexing fevers throughout the Southern States, and to all practitioners of that section it should become of special importance. In order to be less free from error Dr. Joseph Sailer, pathologist to the St. Joseph's Hospital, recommends that the wet method be used. To get the best results he uses the Thoma-Zeiss pipette to save a small amount of blood, which is afterward diluted. On adding the culture of the typhoid bacilli to a drop of this diluted blood, a positive reaction has frequently been obtained in a few seconds. As has been mentioned in a previous issue of the JOURNAL, the method has subsequently proven to give most accurate results with but few failures.

**Diagnosis of Movable Kidney.**—Stehman (*Am. Gyn. and Obstet. Jour.*, February) gives the following "anatomic and pathologic facts which, if kept in mind, will help one materially" in differentiation: "1. The postperitoneal position of the kidney as compared with the liver, spleen, gall-bladder, various cysts and growths within the abdominal cavity, which can be easily demonstrated by combining percussion with inflation of the bowel. 2. The reniform shape of the kidney in comparison with the characteristic shape and feel of the spleen, liver, gall-bladder, etc. 3. The immobility of the displaced kidney during inspiration and expiration as compared with the descent and ascent of the spleen and liver, and growths connected with them during respiration. 4. The pulsation of the renal artery, which, if felt at all, will always be recognized as part of the pedicle, for it must be remembered that the range of motion of the kidney is determined by the vessels, nerves, and ureter. 5. The ease with which the organ can frequently be moved from place to place, and restored to its normal position in comparison with organs or growths whose positions are fixed. 6. Tenderness on pressure and the sickening sensation which is produced by compressing the organ between the two hands."

**Eversion of the Uterus.**—In the *British Med. Jour.* (February 18), another case is added to those of this rare condition now on record. The main features of the labor were: 1, it was a dry labor, the rupture of the membranes occurring at the onset of the pains; and 2, the position was occipito-posterior. These two features, together with 3, the large size of the child, amply account for the undue prolongation of the labor, and for the exhausted, flabby condition of the uterus at its close. The immediate cause of the inversion is less easy to discover, as traction on the cord was not made. The adhesion of the membranes doubtless had some share in the causation of the accident. The most remarkable feature of the case was the ab-

sence of shock and of collapse more than would necessarily attend the loss of so much blood. In commenting, the writer calls attention to the fact that only one case occurred in 190,000 at the Rotunda; Denham had 1 case in 100,000; C. Braun had no case in 259,000; Crosse, in 1847, noted that in 28 per cent. of recorded cases of inversion death occurred in a few hours, that in 42 per cent. death followed later, and that in 7 per cent. the accident led to a fatal result more than a year after its occurrence.

**Vaccination in Great Britain.**—According to the *British Med. Jour.* (February 11), resolutions have been drawn up by the Subcommittee of the Parliamentary Bills Commitiee and adopted by the Council of the British Medical Association. A copy of the resolutions has been sent to every member of Parliament. They refer to two closely related questions, a revaccination bill and the conscience clause. In the closing debate on last year's Vaccination Bill in the House of Lords Lord Lister indicated, and on behalf of the Government Lord Harris promised, that the Government would favorably consider a revaccination bill for the session which has now just begun. This promise is referred to in the resolution, and it is then pointed out that as a result of the operation of the conscience clause an Act for promoting revaccination is now distinctly more necessary even than before. To all who have any faith in vaccination as a preventive of smallpox, and who have observed the proceedings which have taken place under Section 2 of the Act of last year, the increased and increasing need for systematic revaccination can not be obvious.

**Infective Theory of Rachitis.**—S. Mircoli was the first to call attention to the presence of staphylococci and streptococci in the bone marrow of children with rhachitis, which has since been confirmed by others, and to assert that the rhachitic process is an inflammation, the metaplastic ossification not being specific, as it is noted also in the callus of fractures. He also considers the lesions of the nervous system of an inflammatory nature in this disease, and the hydrocephalus a slow inflammatory process. The child may be infected through the skin, lymphatics, pharynx or alimentary canal, and the infection once established it becomes localized at the points where the biologic activity of early childhood is most intense, that is, in the nervous and osseous systems. The intraventricular pressure enlarges the diameters of the head. A genuine cicatricial tissue is noted with the microscope along the lines of ossification, which prevents the lengthening of the bones, while the inflammatory process at the diaphysis softens them and they curve under the weight of the body. He mentions that Glisson has noted actual epidemics of rhachitis, and that von Starck has described a tumefaction of the spleen and of the mesenteric glands during the evolution of this disease.—*Presse Méd.*, January 28.

**The Initium of Obstetrics as an Art.**—The first instruction [in obstetrics] given at a medical school was in the University of Edinburg in 1726. A professorship was then founded, Mr. Joseph Gibson being appointed to a chair. He confined his instructions solely to the midwives. The profession of an accoucheur was esteemed very unbecoming a gentleman, and it was only in the extreme cases that his advice or aid was sought. Midwifery was not recognized as belonging to the duties of a general practitioner. Dr. Smellie, who afterward contributed so much to improve and perfect it at the commencement of his career, united the occupation of cloth merchant and practitioner of midwifery at Lanark. It was not till 1756 that instruction was given by Thomas Young in the University of Edinbugh to a class of medical students. The first record of a man-midwife in the colonies is in a notice of July 22, 1745, of the death of John Dupuy, M.D., a physician in New York. Dr. Atwood is the first who had the hardihood to *proclaim* himself a man-midwife; it was deemed a scandal to some delicate ears, and Mrs. Granny Brown, with her fees of two or three dollars was still the choice of all who thought women should be modest. . . . Toner, in his "Annals of Medical Progress," notices Dr. John Moultrie of South Carolina, as a popular obstetrician and physician who practiced between 1733 and 1773.—"History of Medicine and Medical Men in New Jersey," Dr. Stephen Wickes, 1879.

**Ocular Complications of Cerebrospinal Meningitis.**—The meningococcus has not yet been found in the conjunctivitis that may complicate meningitis. The lesions of the motor nerves of the eye are due to the predilection of the meningeal effusion for the base of the brain. Phenomena of excitation and paralysis in the first branch of the trigeminus may lead to neuro-paralytic keratitis, or it may be caused by a febrile herpes of the cornea. Sudden blindness may be of basal or cortical origin, the former more frequent, occasionally subsiding even after months have elapsed, and even when the pupil reaction is at times absent. If the inflammation spreads to the optic nerves it produces a double optic neuritis with total amaurosis, which may terminate in the restoration of function. This optic neuritis may be due to the presence of microbes or their toxins in the sheath. The papillitis is due to the action of toxins diffusing into the eye. Suppuration of the eye occurs from metastasis or by continuity. He has observed three cases due to metastasis: one a microbian capillary embolism in the retina; in the second a suppurative retinitis without infiltration of the sheath of the optic nerve; in the third the last stage of this affection, the amaurotic eye.—*Rev. Gen. de Path. Int.*, January 5.

**Arsenic in Glycerin and Animal Fats.**—Professor Langmuir read, at a session of the American Chemical Society, a paper of special interest, on the determination of arsenic in glycerin. He considers that at least traces of arsenic are to be found in all glycerin and attributes its constant presence not only to the employment of arsenic in its manufacture, with consequent contamination of the product, but thinks that arsenic is to be found naturally in the fat from which glycerin is obtained. Animals consume a certain amount of arsenic, and this is deposited in the fat of their tissues, to appear later on in products obtained therefrom. Most of the present methods of obtaining glycerin demand the use of arsenic, and Langmuir has succeeded in demonstrating the presence of the poison, even when none has been used by the manufacturers of the glycerin. The paper led to a good deal of discussion, much of which showed a strong tendency to oppose the view that arsenic was deposited in animal fat, and that the contamination of glycerin occurred in that way. Some years ago, when for a time glycerin was lauded as a specific for most constitutional troubles that involved loss of weight, the results obtained from its use in large quantities were contradictory in different parts of the medical world; so the present discussion will be welcome should it help to clear up certain doubts as to the uniformity of its composition as made by different methods. As glycerin still occupies a not unimportant place in the pharmacopeia, the subject is of no little present interest.—*Medical News*, January 14.

**Wounds of Peritoneal Portion of Rectum.**—Quénu adds eight to the twenty-eight collected by Weller Van Hook. Only nine out of the thirty-six recovered. Several of the wounds were made with stiff sounds introduced for irrigating purposes, Quénu's personal case among them. The nurse, against his express orders, used a stiff sound in a case of rectitis, and a perforation resulted. Pain, hemorrhage and general depression are the usual symptoms, but they may be absent. Careful investigation of the rectum with the speculum, the rectoscope, locates the wound, and after cleansing it, certainty is attained by passing a long probe through it and finding that it can be moved freely about. No time must be lost in the laparotomy

that is urgent, not even to remove the patient to a hospital. An inclined plane is necessary, easily improvised. The small intestine is pushed to the umbilicus in a large hot compress, and the rest eviscerated. The perforation was evident in his case from a small subperitoneal ecchymosis. In experiences on the cadaver he much facilitated the operation by inserting an empty rubber bulb in the rectum and having it blown up, thus distending the rectum and raising it. Long and careful lavage with artificial serum at 40 degrees C., extending according to the time elapsed; double and abundant drainage; post-operative treatment; ice to the abdomen, opiates, sips of cold grog and injections of artificial serum. If there is blood in the urine the bladder must be inspected to be certain that the perforation is not double. In one case a rectovesical fistula had been produced, but it healed in a week with a permanent sound.—*Revue de Chir.*, January.

**The Pituitary Body.**—Collina of Bologna states that the pituitary body has a double origin, the principal part being derived from the entodermic layer, and the rest, the part that atrophies, from the ectoderm. Harmonizing with this double origin are the two kinds of cells that make up the gland: principal and chromophiles. He finds that in some of the lower animals (amphioxus, ammocetes, etc.) a bucconeuric canal exists, lined with cilia, through which the water passes that moistens the nervous system. At the outer end of this canal there is located a group of nerve-cells, which he considers represents the nerve part of the hypophysis in the superior animalism and which he interprets as an organ of sense, touch or taste. At the inner end there is a cluster of epithelial cells which may represent the entodermic portion of the true pituitary body of the superior animals, while the bucconeuric canal represents the ectodermic portion. In regard to the function of the pituitary body, he rejects any identity with the thyroid gland, and considers its function to be the production of a fluid necessary to the normal nutrition of the nervous elements. If this function is defective, rapid exhaustion of the nervous organs ensues and death follows. If it is slowly degenerating, the nerve-cells exhibit an inferior activity, and have a tendency to give way to simpler tissues, such as glia or connective tissue. By this theory he explains the origin of acromegalia. When the hypophysis becomes diseased in a chronic form in a comparatively young person, acromegalia is the result, but if it becomes acutely diseased in an adult, there is cachexia, from insufficiency of the pituitary, as has been demonstrated in cases of tumors of rapid growth.—*Gaz. degli Osp.*, January 8.

**Mosquitoes and Malaria.**—Ross, of the Indian Medical Service, makes a preliminary report on recent investigations he has been making as to the infection of birds by mosquitoes (*British Med. Jour.*, February 18). In part he says: Out of 28 originally healthy sparrows subjected to the bites of grey mosquitoes previously fed on diseased sparrows, 12, or 79 per cent., became infected, all with a very large number of parasites, in from five to eight days. This excludes a number of birds which died before the end of the incubation period from diarrhea and other disease to which sparrows in captivity in Calcutta are subject. Out of the 6 birds which failed to become infected after these experiments, one was subjected to a second trial, which gave a successful result. Out of 2 crows and 4 weaver birds, some of which contained halteridium though none contained proteosoma, 1 of the crows and all the weaver birds showed a copious proteosoma infection within nine or ten days of being bitten by grey mosquitoes fed previously on sparrows with the latter parasite. Out of 5 sparrows which originally contained a very few proteosoma, 4 showed a new and much more copious infection a week after being subjected to a similar experiment. The attempt to transmit the proteosoma of sparrows to mainas and some other birds failed. In all the birds in which the parasites appeared after the experiment, the invasion presented such constant and unmistakable characters that no possible room for doubt was left as to the infection being due to the mosquitoes. The blood of the birds experimented with was examined both before the experiment and on several occasions afterward. He has not been able to study the reproductive elements of the mosquito stage of human gymnosporidia; but he considers that there is no reason to suppose that they differ much from those of the proteosoma-coccidia, or that the modes of infection of human malaria are unlike those of avian malaria. The pigmented cells found in mosquitoes fed on blood containing crescents were exactly like those derived from proteosoma. (See page 503.)

**Pathogenesis of Nervous Shock.**—Philippen concludes from numerous experiments with curarized, morphinized and normal animals that the metabolism of the nervous system is not sufficiently important to modify the organic interchanges, and hence that nervous shock can not proceed from arrest of the nutrition of the nervous system. The nutrition of the other parts of the organism, especially of the muscles, is not completely arrested, but merely diminished, in the morbid condition called by Brown-Séquard "the arrest or syncope of interchanges." Nutrition persists, but reduced to its minimum and *perverted*. Philippen continues: "No condition is more liable to favor the evolution of an auto-intoxication than oxidations retarded to an extreme extent. The variety of the poisons thus produced accounts for the variability of the symptoms observed." . . . "The idea that the phenomena of nervous shock proceed from a vitiation of the organic chemic processes, of which the retarded interchanges noted by Roger are merely one of the manifestations, is in perfect harmony with the general trend of modern ideas in regard to the physiology of the nervous system, its pathology and the part it plays in the production of organic poisons." This theory explains also the favorable influence of intravenous injections of salt solution in most infections.—*Presse Méd.*, February 1.

**Perversion of Medical Power.**—At the meeting of the San Francisco Medical Society, January 10, Dr. Chas. G. Kuhlman read a paper in which he stated, from a statistic point of view, some of the disadvantages of the profession in that State. Medical power, as he understands it, means the earning capacity of the physician. There are, he says, 3000 regular physicians in California, and a fair estimate of their earning capacity would be about $5000 each per annum, but of the 1,400,000 inhabitants of that State, over 400,000 obtain all their medical treatment through non-professional corporations and organizations, to which about 200 of the profession give their services. These 200 physicians, it would appear from computation, receive about $450 per annum on an average, while the loss to the profession through their conduct is about $4,000,000 per annum, thus lowering the unit value of the profession in general from $5000 to $3400 per annum. In addition to this, however, there are all the irregular physicians, several thousand in number, who have the patronage of at least one-third of the total population of the State, thus cutting the profession's earnings in both these ways by about two-thirds, or $10,000,000 per annum, making the average practice of the regular physician amount to about $1700 per annum, and allowing for non-collectable accounts about one half, reducing it still more, or to about $850 per annum. That is to say, the earning power of the regular medical profession in California, which would under perfect normal conditions be $5000 each, has been reduced to $850, or an average of only about one-sixth its legitimate value. He went further, giving in detail the causes of these conditions and the remedies he proposes, and which are, according to his plan, a better organization of the medical profession into a distinct corporation, and which should be, to be perfect in its results, not merely local or State, but national in its character. Such an order has already been started and will be known as

the Independent Order of Physicians and Surgeons. Whether this will be successful in doing away with the evils of which he complains is certainly open to question, but every member of the medical profession and legitimate practice will undoubtedly welcome every effort in this direction.

**Reciprocity of Medical License.**—In the Eighth Annual Report of the State Board of Medical Examiners of New Jersey (1898), the secretary, Dr. E. L. B. Godfrey, speaks as follows of international endorsement of medical licenses: "At the present time, the certificates of medical examination and license issued by the Board of Regents of the University of the State of New York, and by the Medical Councils of Pennsylvania and Delaware, are endorsed by this Board. The endorsement of the medical licenses of other States, or interstate reciprocity of medical license, affects more or less the interests of the entire medical profession, and can not, therefore, be satisfactorily adjusted until the force of intelligent professional opinion and legislative enactments clear the way for it. Interstate reciprocity requires that the standards of academic and medical education shall be substantially the same in all States; that all examinations by State boards shall be conducted on a similar basis, and that all certificates of license shall be issued under similar conditions. Until this uniformity of aim and action shall have been attained in the different States, it is impossible to secure universal reciprocity, because the endorsement by one State board of the license issued by another State board is equivalent to the declaration that their requirements are equal, and this is far from being the case in many instances. The solution of this problem largely devolves upon the National Confederation of State Examining Boards. On account of the long interval between medical examinations in this State, and the subjecting of physicians of long experience to re examination, this Board believes it due to the medical profession that interstate endorsement of medical licenses should be extended as far as the present standards will admit, and that unremitting effort should be made to bring the standards of the various State boards into substantial accord."

**Sufficiency of Indictment.**—The supreme court of Ohio holds, in Hale vs. State, that an indictment, drawn under the act passed Feb. 27, 1896, "to regulate the practice of medicine in the State of Ohio," which charges that the defendant, without having complied with the provisions of the act, for a fee, prescribed, directed and recommended for the use of a person named a drug, medicine and agency, put up in a paper box, on which he wrote directions, to which he signed his name, and appended thereto the letters "M.D." is not bad for duplicity. It explains that it is not unusual, in prescribing a remedy, whether it is prepared ready for use, by the physician, or is to be filled by a druggist, to accompany the prescription with directions for the use of the remedy; and when such direction is written, and signed with the usual professional designation or abbreviation of a physician appended to the signature, by a person not authorized to practice medicine, it insists, there is committed, by the same transaction, an offense against each of the provisions of the statute, and both may be charged in a single count without rendering the indictment objectionable on the ground of duplicity, because, when an offense against a criminal statute may in the same transaction, be committed in one or more several ways, as therein provided, the indictment may, in a single count, charge its commission in any or all of the ways specified, if they are not repugnant. Under such indictment there may be a conviction upon proof of a violation of either of the provisions; and such conviction or an acquittal will necessarily be a bar to any further prosecution based on that transaction. The supreme court further holds that an averment in such an indictment as that under consideration, that the defendant, at a time more than ninety days after the passage of the statute, practiced medicine in the county of his residence without having left with the probate judge of the county a certificate of the State Board of Medical registration and examination, is sufficient to show a failure to comply with the provisions of the statute, and that it is unnecessary to aver either that the defendant was not a graduate of a medical college, or that he was not a legal practitioner of medicine when the statute was enacted. And it holds that the proviso contained in Section 4403f of the Revised Statutes of 1890, which, after a definition of what shall be regarded as practicing medicine or surgery, excepts service in case of emergency, the domestic administration of family remedies, etc., is not descriptive of the offense made punishable by the first clause of Section 4403f, which provides that any person shall be guilty of a misdemeanor who practices medicine or surgery as defined in Section 4403f without having complied with the requirements of the law, and, hence, that an indictment, otherwise good, is not demurrable for want of an averment negativing the facts to which the proviso relates.

**Iowa Creates a State Board of Control.**—One of the most important acts of legislation in Iowa for the year 1898 pertains to the creation of a "Board of Control of State institutions." This is to consist of three electors of the State, not more than two of whom shall belong to the same political party; the regular term of office to be six years, and a salary of $3000 per annum to be paid each member, who must give an official bond for $25,000; appointments to be made by the governor and approved by a two-thirds vote of the State senate. This Board is to have full power to manage, control, and govern, subject only to the limitations contained in the act creating it, the soldiers' home, the State hospitals for the insane, the college for the blind, the school for the deaf, the institution for the feeble minded, the soldiers' orphans' home, the industrial home for the blind, the industrial school, in both departments, and the State penitentiaries; the boards of trustees and commissioners heretofore charged with the government of these institutions being abolished. It is made one of the duties of the Board, or a committee thereof, to visit and inspect, at least once in six months, the institutions named, and investigate their financial condition and management, the Board being given power to compel the attendance of witnesses, who must testify regardless of the fact that their testimony may tend to criminate them or expose them to public ignominy, though no person shall be prosecuted or subjected to any penalty for or on account of anything he may testify to. But each hospital for the insane must be visited at least once a month, and it is provided that a woman may be appointed to visit any such hospital at the direction of the Board. Discharge of the hospital employes for cause is, however, left with the superintendent. Superintendents, wardens, or other chief executive officers are appointed by the Board. Among other things, at the stated visits provided for, inspection is to be made of every part of each institution, and all the places, buildings and grounds belonging thereto, or used in connection therewith; an examination made of the general and special dietary, and, as far as circumstances may permit, every inmate of the institutions, and especially those admitted since the preceding visit, is to be seen. The Board is given power to investigate the question of insanity, or propriety of the commitment or detention of any person committed to any of the charitable institutions, to transfer patients, to collect information for, and encourage the scientific investigation by the medical staffs of methods of treatment of patients. The Board is to incorporate in its reports suggestions for legislation; and is also to investigate thoroughly the reports and doings of the regents of the State University, etc.

**Echinococcus of the Liver.**—Weir (*N. Y. Medical Record*, February 4, p. 149,) reports the case of a man 39 years of age, who earlier in life had been a wine-taster by occupation, and who gave a history of marked alcoholism for several years. For

nearly two years he had noticed his belly growing gradually larger. Jaundice developed and lasted for three weeks. Considerable quantities of ascitic fluid were evacuated by frequent paracentesis. Twenty-five pounds had been lost in weight. The urine contained a few faintly granular casts. The areas of hepatic and splenic percussion-dulness were both increased. With the object of preventing a recurrence of the ascitic accumulation an attempt was made to establish a new venous connection between the liver and omentum and the walls of the abdomen. A four-inch vertical incision was made on the right side of the upper third of the rectus muscle, whose sheath was opened and which was itself strongly pulled to the left, the posterior sheath, with the peritoneum being then divided. Several quarts of ascitic fluid escaped, and the abdomen was thoroughly emptied by liberal use of large, sterilized gauze pads used as sponges. The enlarged liver, with its thickened capsule, extended some four inches below the ribs. The spleen was doubled in size and held by adhesions. The omentum, though quite small, was thicker than common and filled with unusually distended veins. The intestines were everywhere of a deep purplish-red hue. The antero-superior surface of the right lobe of the liver, the corresponding diaphragmatic part of the peritoneum, and the parietal peritoneum adjoining the wound were freely scraped with the sharp point of a steel hatpin, and after the resulting oozing of blood was arrested, the omentum was stitched on each side of the wound with six or eight catgut sutures, and the wound was finally closed by buried layer sutures. Before this was done, however, a small opening an inch long was made above the pubis to admit to the space behind the bladder a double perforated glass drainage-tube, which was connected subsequently with a permanent siphon attachment. Compression of the abdominal wall was effected by broad, overlapping strips of sticking plaster passing transversely, and extending from the ensiform cartilage to the site of the drainage-tube, sterile dressings having been first applied to the united wound and to the tube opening. The patient did fairly well for three or four days, but he then sank gradually and died on the fifth day after the operation. The autopsy disclosed an extensive peritonitis, most intense in the pelvis. Fine, firm, fresh adhesions had formed over the scratched surfaces. In their midst, holding the liver fast to the diaphragm, was a small amount of effused blood. The right lobe of the liver was nearly normal in size; the left lobe was much enlarged. The liver capsule was greatly thickened. The fibrin patches over the left lobe contained many micrococci in chains and scolices of the echinococcus. The liver contained a large amount of nodular fibrous tissue, and the remaining parenchyma appeared fatty. In the superior portion of the right lobe, and pushing the diaphragm upward was a cyst about nine centimeters in diameter, containing a colorless fluid in which were numerous flocculi that on examination proved to be echinococcus-scolices.

**Insanity in Switzerland.**—The following interesting case is given in *Consular Reports* for February, to illustrate what may befall an American citizen who may chance to visit Switzerland: A. B., born in Switzerland in 1864, emigrated to the United States in 1879. In 1898, having saved enough money to gratify his desire of visiting his birthplace, he took passage from New York, but he was robbed of his savings on the steamer and arrived in Switzerland in a destitute condition. The Swiss law proclaims "Once a Swiss citizen, always a Swiss citizen," in spite of the fact of a native's prolonged absence in another country and of his swearing allegiance to and becoming a citizen thereof, thus making a peculiar duality of citizenship. The knowledge of this law of his native country induced the man to apply for admission to a labor colony, a kind of public workhouse, in Berne. The work he was put to was hard, while the food was insufficient. His hope of getting back to the United States and his continuous harping thereon earned for him the name of a homesick melancholic, and he was sent for mental examination to a hospital. A physician, not an authority on insanity, gave a certificate declaring the man to be insane. While in the hospital and awaiting transportation to one of the insane asylums, he escaped to the consulate and asked for protection as an American citizen. At the consul's suggestion, he agreed to return to the hospital for further observation, where he was at liberty to go about as he pleased. In his conversations with the consul, no traces of insanity or hallucinations were discernible—simply a reiteration in a most natural manner of wanting to return to the United States, where he could get work to which he was accustomed. A compromise was reached and the man was sent back to this country, and probably saved from a fate worse than death. The consular report says that the insanity rate of Switzerland is very high. According to enumeration at the close of the year 1897, the inmates of the twenty State insane asylums of the Republic numbered 6164, against 5933 in 1896. The number of females predominated—3262 against 2902 males. The commitments to the asylums during the year 1897 are recorded as follows: Males, 1350; females, 1050; total 2400. Released during the year, 1247 males and 922 females; found not insane after commitment, 15. The expenditure of the State for the keeping of each person is given as about 250 francs ($48.25) per annum. There are no laws for the commitment of insane persons. No judicial proceedings, such as a trial before a competent court or expert commission, are followed; but simply the written assertion of an ordinary physician, who need not be a specialist on insanity, that in his belief the person is insane, is deemed sufficient for the seizure and confinement of such an accused person in an asylum.

**Gleanings.**—Klein reports a case of pubertas precox in a girl of 2½ years, fully developed breasts and external genitals, with irregular menstruation, psychically not developed beyond her years (*Deutsche Med. Woch.*, January 19) . . . Rinsing the mouth with oxygenated water will remove the discoloration of the teeth caused by mercurial treatment (*Semaine Méd.*, January 18) . . . Aneson warmly recommended by Rubinstein and Mosbacher, in place of cocain, for both Schleich and Oberst local anesthesia (*Cbl. f. Chir.*, January 17) . . Severe chorea with absolute insomnia and delirium complicating pregnancy, cured by artificial abortion. . . . Nigrisoli reported at the Italian Congress of Surgery, that he has operated on 55 hydatid cysts; liver, 26 with 5 deaths; spleen, 7; mesentery, 2; multiple in abdomen, 7; kidney, 4; pleura or lung, 3. He resects the cyst and fastens to the wall; total excision only in case of small cysts. . . . Out of 115 cases of ocular affections consecutive to relapsing fever, 19 were cases of choroiditis and 92 of iridochoroiditis; diagnosis generally favorable. . . . Baturew describes a case of complete amaurosis of both eyes, following the ingestion of four grams of quinin; slight improvement from massage and injections of strychnin. . . . Fournier states that half the children with heredosyphilis have strabismus. . . . Eclamptic amaurosis, expulsion of dead fetus, fifth month. Amaurosis persisted several days after eclampsia had subsided (*Rev. Gen. d'Ophthal.*, December 31). . . . Ingianni asserts that it is possible to make a new urethral canal that will substitute the normal canal in structure and function, composed of mucous membrane and cavernous tissue, without muscles—dogs (*Gaz. degli Osp.*, 1898, No. 127). . . . Case of Basedow's disease appearing with the menopause cured with ovarin (Delaunay, *Presse Méd.*, January 21). . . . Keloid tumor on the ear cured with 20 per cent. creosoted oil (*Ann de Derm.*, December, 1898). . . Several other cases noted of fetal heart action persisting half an hour to two hours after cessation of respiration (*Cbl. f. Gyn.*, 1899, 1). . . . The mortality after vaccination is still 1 in 14,000 in England, while it

is only 1 in 100,000 in Germany. . . . Chrobak has performed the Cesarean operation three times on one woman, a living child each time. . . . Two cases of echinococcus of the orbit (*Wiener Klin. Woch.*, February 9). . . . Two hollow calculi found in kidney of man dying from retention with hypertrophied prostate, one the size of an egg, 43 grams, the other 8 grams. Each contained a fluid resembling urine (*Cbl. f. Chir.*, February 11). . . . Two cases of acute, non-suppurating sinusitis produced by the pneumococcus with the typic effusion, cyclic evolution and pain (*Rev. de Laryng.*, xix, 33). . . . Two cases of atrophy of the optic nerve after injections of quinin. Sight was recovered in a few weeks (*Arch. de la Policlinica*, February).

### Cincinnati.

Ohio Quacks.—According to the third annual report of the Ohio State Board of Medical Examination and Registration, 700 quacks are declared to have been driven out of the State. The Board has been in existence three years, and during that time has refused 369 applicants certificates to practice medicine. In addition to all this six so-called medical colleges have been closed. The trend of the Board is to endeavor to supersede as far as possible medical schools generally, in so far as examinations for entering the profession are concerned. The report further recommends that the State Board be empowered to require all applicants desiring to practice in this State, whether they are graduates of recognized medical schools or not, to submit to an examination by the said Board as to their technic and general literary knowledge. During the past year, 790 certificates were allowed graduates of medicine, 14 to legal practitioners, 1 to an examined applicant, and 12 to midwives. In addition there were 30 rejections. Sixty-five "physicians" were prosecuted for violating the medical law; of these 42 were convicted, and 14 cases are now pending.

Examination.—Competitive examination for the position of interne to the Cincinnati hospital will be held in the library of that institution from March 6 to 10 inclusive. Of the number coming up for this examination, eight will be chosen, four to go on duty April 10, four on the 10th of the following October. Any student or graduate of a regular school is eligible, provided he has attended two courses of the hospital lectures.

### Detroit.

Health Report.—For the week ending February 25: Deaths 105; under 5 years, 37. Births, male 46, female 31. Contagious diseases: diphtheria, 4 cases last report, 11 new cases, 5 recovered, 3 dead and 7 now sick; scarlet fever, 26 last report, 9 new cases, 6 recovered, none dead and 29 now sick.

Proposed Legislation.—Several bills for the regulation of the practice of medicine in Michigan have been introduced into the Legislature at Lansing during the past month. The different schools have arrived at an amicable settlement of their differences and have at last decided upon one bill, which seems to be the most desirable for enactment. The bill provides for an examining board, appointed by the governor, consisting of five regulars, three homeopaths and two eclectics. No examinations in materia medica will be required of the applicant for a license to practice medicine, but all other medical and surgical subjects are included in the examination. It is confidently hoped and expected that the bill will pass and be signed by the governor.

Board of Health.—The new appointees are: Drs. J. L. Irwin and C. F. Lawson to fill the vacancies made by Dr. C. S. Morley, whose appointment was not confirmed by the Senate, and Dr. H. W. Longyear, whose term of office expires on March 1.

### Washington.

Health of the District.—The report of the health officer for the week ended February 11, shows the total number of deaths to have been 126, of which 68 were white and 58 colored. Among the principal causes of death were, apoplexy, bronchitis, consumption, diphtheria, brain, heart and kidney diseases, malignant tumors, pneumonia, typhoid fever and la grippe. At the close of the week there were 98 cases of diphtheria, 122 cases of scarlet fever and 10 cases of smallpox under treatment.

Central Dispensary and Emergency Hospital.—At the meeting of the Board, held on February 10, the appointment of Dr. Frederick H. Mohart as resident physician and Dr. Jesse L. Adams as assistant resident physician, was approved. The donation day, recently held, was reported to have been very satisfactory. A good supply of clothing, dry goods, tableware, staple and fancy groceries, fruits, vegetables, canned meats, liquors, medicines, books, fancy articles and money was donated.

Enforcing the Practice Act.—Prof. A. J. Dexter was fined $50 for practicing medicine in the District of Columbia without license; the defendant claimed he did not practice medicine, that he simply used electricity. The judge, in disposing of the case, cited the law, noting its exceptions, and finding electricity not being among the exceptions, but on the contrary, being used in the common practice of medicine, held the defendant guilty. Notice of appeal to a higher court was given by the defendant, and considerable interest centers in the result.

For Prevention of Smallpox.—Health Officer Woodward and the Commissioners prepared a joint resolution which they submitted to Congress, asking for an appropriation of $50,000. Senator McMillan reported the bill in the Senate, and it was promptly adopted by both houses. It provides that $50,000 be appropriated for the proper care of smallpox patients and to prevent the spread of contagious diseases in the District, including a house-to-house inspection and such compulsory vaccination as may be deemed necessary by the health officer.

St. Elizabeth's Hospital.—Mr. Catchings has introduced a bill into the House providing that $245,000 be appropriated for a tract of ground as an addition to the property for the Government Hospital for the Insane (St. Elizabeth's), to be used for the insane soldiers and sailors of the U. S. Army and Navy. The bill directs the Secretary of the Interior to make the purchase.

Physicians Appointed.—Dr. George R. Sorrell has been appointed by the District Commissioners, resident physician of the Washington Asylum, vice Dr. Edward A. Gorman, resigned. . . . The Commissioners have increased the salary of Dr. John N. Stoutenburg, assistant medical inspector, from $2.50 to $3.00 per day. . . . Acting Asst.-Surgeon I. W. Bishop has been appointed and ordered to the hospital ship *Relief*, to serve in the Philippines.

### Philadelphia.

Packard—Dr. John H. Packard, who for a long time has been on the surgical staff of St. Joseph's Hospital, has resigned, and Dr. J. Chalmers DaCosta has been appointed in his place.

Kindleberger.—Dr. Charles P. Kindleberger, assistant-surgeon, U. S. N., who had been assigned to the battleship *Olympia*, and was in the battle of Manila, has been visiting his home in this city during the past week. The Doctor was a graduate from the University of Pennsylvania, class of 1894, with high honors.

University Smoker.—The officers of the alumni of the University of Pennsylvania who officiated at the last semi-annual smoker and entertainment were: W. M. Welch, president; S. W. Latta, R. C. Norris and L. S. Clark, vice-presidents; S. W. Wadsworth and B. F. H. Stahl, secretaries; H. B. Carpenter, treasurer. The other officers are: Drs. Samuel Morton, J. M. Tyson, H. D. Adler and Jay F. Schomberg.

Hospital Celebrates Golden Jubilee.—The St. Joseph Hospital celebrated its fiftieth anniversary on February 22. Owing to the rapid growth of the Pennsylvania Hospital a meeting was held on Nov. 22, 1848, for the purpose of organizing for erecting a building similar in its purpose to this

well-known institution. As a result of this meeting, a three-story building was erected on Green Hill near Seventeenth Street, fronting on Girard Avenue, which was properly prepared for the treatment of patients. On June 18, 1859, the Sisters of St. Joseph were installed in the institution and have continued to act as managers. During the past few years the additions that have been made are a laboratory building, operating room, sterilizing and anesthetizing room, together with a filtering plant which supplies water to the entire building. During the past year more than 1000 cases in excess of former years have been treated, a great number (224) of which were soldiers brought from the different army camps.

WILL THE BOARD OF HEALTH BE ABOLISHED?—According to the *Bulletin*, Mr. Osbourn, a member of the State Senate, introduced a bill abolishing the Board of Health of Philadelphia. It is stated that he introduced another bill, providing that the powers and duties now by law vested in the Board of Health of Philadelphia shall be performed by a bureau of the Department of Public Safety, to be known as the Bureau of Health, empowering the mayor to appoint a chief officer of the bureau and authorizing the mayor to organize the bureau and control the subordinate officers thereof. These bills were immediately reported favorably by the committee. It is needless to say that in a condition in which politics is the governing agent in the control of diseases rather than medicine, a queer state of affairs would ensue which would react very unfavorably upon the community at large.

EPILEPTICS MAY ATTEND PUBLIC SCHOOLS.—At the last meeting of the Board of Health, City Solicitor Kinsey stated that it was not within the power of the Board of Health to debar children suffering from epilepsy from attending the public schools of the city, but that the Board of Education was the only body which might take such action. The Board approved a bill presented which provides that a proper penalty shall be imposed upon all who use adulterated or unwholesome milk. The present law is ineffectual. The subject of the cause of the late epidemic of typhoid fever was then introduced. It had been the generally expressed opinion that the epidemic was due to the bursting of an interrupting sewer, but Director Thompson said that after a careful examination had been made no leak was found. So far, no assignable reason has been given for the frightful number of cases of typhoid that have occurred during the past month.

BEQUESTS.—A bequest of $5000 has been made to the Veterinary Department of the University of Pennsylvania by Mrs. Josephine Lippincott. . . By the will of John H. Mullin, the following bequests have been made: To the sisters of St. Joseph, $1000; Sisters of St. Francis, for the support of St. Mary's Hospital, $1000; Sisters of St. Francis, for the support of St. Agnes Hospital, $1000. . . The will of Elizabeth L. Devine was admitted to probate February 25. The first provision is that an annuity of $1000 be given to the Sisters of St. Joseph's Hospital during the lifetime of her adopted daughter and two nephews. The remainder of the estate is given to several church organizations and to charitable institutions as follows: To St. Mary's Hospital, Episcopal Hospital, and the German Hospital, with further provision for the residuary estate to apply to the establishment or endowment or maintenance of a training school and dispensary connected with St. Joseph's Hospital.

MORTALITY STATISTICS.—According to the report of the Board of Health, the epidemic of typhoid fever remains unabated. In fact the statistics go to prove that typhoid fever is on the increase. The principal causes of death were: Apoplexy, nephritis, cancer, tuberculosis, diabetes, heart disease, influenza, suicide.

## THE PUBLIC SERVICE.

**Marine-Hospital Changes.**—Official List of Changes of Stations and Duties of Commissioned and Non-Commissioned Officers of the U.S. Marine-Hospital Service, for the fourteen days ended Feb. 23, 1899.

P. A. Surgeon J. J. Kinyoun, to proceed to Albany, Ga., for special temporary duty.

P. A. Surgeon C. P. Wertenbaker, to rejoin station at Wilmington, N. C.

Acting Asst.-Surgeon J. E. Brady, granted seven days' extension of leave of absence from Feb. 9, 1899.

Acting Asst.-Surgeon W. H. Gerrish, granted leave of absence for thirty days on account of sickness.

Acting Asst.-Surgeon W. J. O'Reilly, granted leave of absence for two days from Feb. 28, 1899.

Acting Asst.-Surgeon E. L. Phillips, granted leave of absence for fifteen days.

RESIGNATION.

Acting Asst.-Surgeon E. L. Phillips, resignation accepted as tendered, to take effect upon the appointment and qualification of his successor.

### CHANGE OF ADDRESS.

Arthur, H. M., from Glen Dale to Alfordsville, Ind.
Aldrich, J. F., from Lenox to Murray, Iowa.
Coe, W. B., from Tonganoxie, Kas., to Cooper, Iowa.
Donohue, M. J., from Clintonville, to Antigo, Wis.
Earle, F. G., from 270 East North Av. to 91 Lincoln Av., Chicago.
Foerster, O. H., from Anniston, Ala., to 239 29th St., Milwaukee, Wis.
Frahm, M., from 288 Michigan Av. to 1709 89th Pl., Chicago.
Gamble, C. T., from Almy to Diamondville, Wyo.
Gist, V., from Roff, I. T., to Spanish Fort, Texas.
Harrison, A. C., from Talleysville, Va., to 3 W. North Av., Baltimore, Md.
Hulshizer, A. H., from 1419 E. Susquehanna to 1517 N. 15th St., Philadelphia, Pa.
Klein, M. J., from 823 Lincoln to 1002 Wellington, Chicago.
Lambert, F. E., from Alburnett to Cedar Falls, Iowa.
Layton, M. A., from Delray to Woodmere, Mich.
Lamb, D. H., from Fort Myer, Va., to Owosso, Mich.
Maher, H., from 34 W. 25 to 236 W. 44th, New York City.
McArthur, L. L., from 4247 to 4415 Drexel Boul., Chicago.
McNamara, F. W., from 278 State to 70 Madison St., Chicago.
Venn, A. E., from 270 E. North Av. to 88 Lincoln Av., Chicago.
Wooding, B. F., from Fort Monroe to 10 Brown Palace, Denver, Colo.
Williams, E. E., from 628 W. Adams to 230 S. Paulina St., Chicago.
Yoder, J. A., from Millersburg to Lucas, Ohio.
Zederbaum, A., from 1625 Court Pl. to 110 15th St., Denver Colo.

### LETTERS RECEIVED.

Allen, W. H., Blodgett, Mo.; Arthur, F. M., Alfordsville, Ind.; Anderson, A. A., New York City; Ambrose, O. A., St. Louis, Mo.; Armstrong, C. G., Webster Grove, Mo.

Bradley, J. S., Madison, Wis.; Brown, M. A., Cincinnati, Ohio; Belfrage, D. M., San Francisco, Cal.; Banning, O. & M. T. Co., Ft. Wayne, Ind.; Brothers, S. (2), New York City; Bonney, D. G., Denver, Colo.; Banta, C. F., Eureka, Ill.; Bromine Iodine Chem. Co., Binghamton, N. Y.; Bassett, H. L., Philadelphia, Pa.; Babcock, T. C., Philadelphia, Pa.; Brink's Express Co., Chicago; Brunson, R., Hot Springs, Ark.; Bonwill, J. S., Philadelphia, Pa.; Barnhill, J. U., Columbus, Ohio.; Bancroft, R. G., Columbus, Ohio.

Cheek, J. M., Highgate, N. C.; Corlett, W. T., Cleveland, Ohio; Chambers, H. P., Plymouth, Mich.; Coe, W. B., Cooper, Iowa; Caton, C. W., Coshocton, Ohio; Clark, A., San Luis Potosi, Mex.; Campbell, D. P., Tomich, Colo.; Campbell, W. S., Rochester Mills, Pa.; Casselberry, W. E., Chicago; Cassady, Geo. W., Chicago; Crain, F. M., Doland, S. D.; Cordell, E. F., Baltimore, Md.

Donohue, M. J., Clintonville, Wis.; Dow Portable Electric Assistant Co., Boston, Mass.; David, E. L., Louisville, Ky.; Durham, C. E., Galveston, Texas.

Edward, A., Reedsburg, Wis.; Elliott, H. G., New York City.

Foster, Eugene (2), Augusta, Ga.; Freeman, L. D., Nashville, Tenn.; Foshay, P. M. (2), Cleveland, Ohio; Finch, R., Salisbury, Eng.

Gardner, S. E., Mt. Pleasant, Mich.; Graham, Mrs. S., Butler, Pa.; Goss, O. W., Lakeport, N. H.; Gorin, J. P., New York City; Gihon, A. L., New York City; Gist, V., Spanish Fort, Texas.

Hermann, A. L., Minneapolis, Minn.; Hamilton, C. S., Columbus, Ohio; Hill., W. H., Gentryville, Mo.; Harrison, A. C., Baltimore, Md.; Henry, A. G., North Baltimore, Ohio; Huizinga, A. G., Chicago; Hardman, S. M., Grafton, W. Va.; Hagan, A. W., Buffalo, N. Y.; Harsha, Wm. M., Chicago.

Jeffers, Geo. D., Louisville, Ky.; Jacobs, C. C., Frostburg, Md.; Juler, E. Cundell, Cincinnati, Ohio; Jastrow, Morris, Jr., Philadelphia, Pa.; Jones, L. C., Sutter Creek, Cal.; Johnson, H. L. E., Washington, D. C.; Jenkins J. F. (2), Tecumseh, Mich.

Keifer, G. F. Lafayette, Ind.; Krausgrill, D., Charleston, Ind.; Kempson, J. F. & Co., New York City; Kelly, A. O. J., Philadelphia, Pa.; King, A. F. A., Washington, D. C.; Kuhlman, C. G., San Francisco, Cal.

Loring, F. M., Artesian, S. D.; Lambert, F. E., Alburnett, Iowa; Laughlin, Jno., Rantoul, Ill.; Lautenbach, L. J. (2), Philadelphia, Pa.; Larkins, E. L. (2), Terre Haute, Ind.; Lewin, & Meyer, Detroit, Mich.; Lamb, D. H., Owosso, Mich.

Maltine Company, Brooklyn, N. Y.; Mayer, Emil, New York City; Mattice, R. I., Omaha, Neb.; Medical and Surgical Reporter, Toledo, Ohio; Mendez, Arturo, San Luis Potosi, Mex.; Miller, C. S., Brockton, Mass.; Mellins Food Co., Boston, Mass.; Morrow, A. M., Salina, Iowa; Medical Advertising Bureau, New York City; Munn, E., Minneapolis, Minn.; McIntire, C., Easton, Pa.; McArthur, L. L., Chicago.

Oppenheimer, Seymour, New York City; Overall, G. W., St. Louis, Mo.

Parker, W. T., Westboro, Mass.; Pipes, J. R., Cleveland, Ohio; Pleasant Valley Wine Co., Rheims, N. Y.; Putnam's Sons, G. P., New York City; Parrott, J. M., Kinston, N. C.; Plummer, H. E., Des Moines, Iowa; Perry, E. F., Brighton, Mass.

Rawlins, J. A., El Paso, Texas; Raymer, A. J., Neebish, Mich.; Reed, C. A. L., Cincinnati, Ohio; Reed, G. D. (2), Topeka, Kas.; Reid, J., New York City; Reder, F., St. Louis, Mo.; Reifsnider, C. C., St. Louis, Mo.; Roger, A. E., Bloomington, Ill.; Rohr, F. W., Chicago.

Savage, G. C., Nashville, Tenn.; Sherman, J. S., Cassopolis, Mich.; Simplex Lamp Co., Brooklyn, N. Y.; Sherer, J. W., Kansas City, Mo.; Smith, Eugene, Detroit, Mich.; Smith, E. H., Santa Clara Cal.; Sloane, J. B., Detroit, Mich.; Smith-Premier Typewriter Co., Syracuse, N. Y.; Solly, S. E., Colorado Springs, Colo.; Stokes, C. K., Philadelphia, Pa.; Stout, J. C., Oakland, Cal.; Stout, J., Ottawa, Ill.; Stucky, J. A., Lexington, Ky.; Steely, E. A., Anna, Ohio.

Taylor, H. L., St. Paul, Minn.; The Dr. Koonse Co., Lafayette, Ind.; Trawick, J. D. (2), Nashville, Tenn.; Tuttle, H. H., Springfield, Ill.; Treat, E. B. & Co. (2), New York City.; Trout, E. H., Chicago; Tyree, J. S., Washington, D. C.

Upham, J. H. J., Columbus, Ohio.

Wagar, C. P., Toledo, Ohio; Ward, W. K., Washington, D. C.; Warner, W. R. & Co., Chicago; Wells, G. R., Livingston, Mont.; Wheat, J. E., Los Angeles, Cal.; White, F. T. Co., Chicago; White Rock Mineral Spring Co., Waukesha, Wis.; Wick, D. M., Cedar Falls, Iowa; Wilder, W. H., Chicago, Wingate, U. O. B., Milwaukee, Wis.; Woldert, E. A. (2), Philadelphia, Pa.; Woodard, R. C. (2), Augusta, Ga.; Wooding, B. F., Denver, Colo.; Woodruff, E. W., Columbus, Ohio; Worobrief, V., Moscow, Russia; Wright, P. S., Kent, Ohio.